

The annual report of the Medical and Health Departments, Kedah.

Contributors

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THE ANNUAL REPORT

OF THE

MEDICAL & HEALTH DEPARTMENTS, KEDAH.

FOR THE YEAR

1344 A. H.

(22ND JULY, 1925 TO 11TH JULY, 1926)

BY

DR. D. BRIDGES,

STATE SURGEON TO THE KEDAH GOVERNMENT.

PRINTED AT THE CRITERION PRESS, LTD., PENANG.

1927.



Note.—Charts 1, 2, 3, 4, 4a, 5, 8, 9 & 10 referred to in this report have not been printed.

ANNUAL MEDICAL AND SANITARY REPORT, KEDAH,

For the Year Ending 30th Zulhijjah, 1344 A.H.

(22nd July, 1925 to 11th July, 1926, A.D.)

I. ADMINISTRATION.

Staff.

The principal appointments in the Department are as follows:

The State Surgeon.

Medical Department.

- 3 Medical Officers (only 2 have been appointed. Assistant Surgeon acting in Alor Star).
- 1 Lady Medical Officer.
- 4 Assistant Surgeons (only 3 appointed—one vacant).
- 2 European Nursing Sisters.
- 52 Dressers (including 5 Laboratory Assistants).
- 6 Midwives.
- 8 Vaccinators.

Health Department.

The Health Officer.

- 4 Health Inspectors attached to Health Office.
- 11 Sanitary Inspectors attached to various Sanitary Boards.

Dr. D. Bridges, State Surgeon, returned from vacation leave on 6-11-25 (19-4-44).

Dr. A. G. H. Smart, Health Officer, was transferred to the Straits Settlements on 13-3-26 (28-10-44).

Dr. J. I. Baeza from the Straits Settlements succeeded him in Kedah.

Dr. J. Portelli, Medical Officer, South Kedah, proceeded on vacation leave on 29-4-26 (16-10-44). He was succeeded by Dr. J. S. E. Manley from the Straits Settlements.

Dr. R. B. Hawes, Medical Officer, Central Kedah, proceeded on vacation leave on 20-6-26 (9-12-44).

The appointment of a Lady Medical Officer was created, and Dr. (Miss) H. M. Garlick assumed duties as the first Lady Medical Officer on 5-9-25 (16-2-44).

Assistant Surgeon, E. Wynne resigned, and was succeeded by Assistant Surgeon, A. O. Merican at Sungei Patani.

Assistant Surgeon S. M. Kumarasamy was transferred from Padang Besar to Kulim. Assistant Surgeon C. Ratnasingham succeeded him at Padang Besar.

Nursing Sisters, E. C. Juniper and J. Howard, resigned on the termination of their agreements and were succeeded by Sisters M. Senior and R. Spry.

- 5 Probationer Dressers were appointed.
- 1 Probationer resigned.
- 1 Dresser was retired on medical grounds.

Dressers' Grade Examination.

Two examinations were held during the year with the following results:—

	No. of Candidates.	Result.
Moharram (August 25)	{ 5 for First Grade	1 passed
	{ 9 for Second Grade	2 passed
	{ 8 for Third Grade	2 passed
Rejab (February 26)	{ 2 for Second Grade	1 passed
	{ 3 for Third Grade	1 passed

These include 11 candidates from Estates, of whom all failed except two who passed the Third Grade. These results are not good and efforts are being made to give more lectures to Dressers.

Examination of Health and Sanitary Inspectors.

3 Sub-Sanitary Inspectors were promoted to Probationer Health Inspectors, and 3 Probationary Health Inspectors to Grade II on passing examination.

One Sanitary Inspector who was unable to continue his studies at Singapore for the Royal Sanitary Institute Course the previous year, owing to illness, was sent again to Singapore to take the course.

Ordinances.

No ordinance was passed during the year affecting public health.

Financial.

REVENUE (Medical).

The total revenue collected during the year was \$56,486.69 against \$42,884.65 during 1343 A.H. The increase is mainly due to the new scale of charges, on patients from Estates, adopted as from 1-10-44. The new rate is 85 cts., per diem against the old rate of 40 cts.

EXPENDITURE (Medical)

	1343.	1344.
Salaries &c.,	... \$133,985.10	\$145,405.31
Other Charges	... 159,161.70	177,979.05
Total	... \$293,146.80	\$323,384.36

The increase in the salaries is due to annual increments under schemes, the appointment of a Lady Medical Officer, and an Assistant Surgeon (Kulim). The increase under "Other Charges" is due to the increased number of inpatients.

REVENUE (Health)

\$38 collected as fees for Births and Deaths.

Certificates being the only source of revenue.

EXPENDITURE (Health)

	1343	1344
Salaries &c.	... \$15,621.78	\$22,534.63
Other Charges	... 3,909.12	5,778.01
Total	... \$19,530.90	\$28,312.64

These figures do not include salaries of Inspectors employed under the Sanitary Boards, but include money spent on Anti-Malaria Work (Chiefly by oiling) in areas within the jurisdiction of these Boards.

The total expenditure of both the departments, \$351,697 represents an approximate percentage of 3.83 on the total revenue of the State for 1344 A.H. Chart I.

II. PUBLIC HEALTH.

(a) General Diseases.

Under this heading it will be seen that Bowel and Lung diseases have a high incidence both as regards the general population and the Estate population (Tamil chiefly).

This is in keeping with experience of previous years. The figures for 1344 are no worse but are no better than those of last year. The position seems to be fairly well consolidated and much improvement is not to be expected, except as regards bowel complaints which should be gradually reduced, as stricter measures are enforced both in plantations and towns as regards water supply and general sanitation. Chart 2.

(b) Communicable Diseases.

The diseases under this group continue to show the highest incidence of all diseases recorded, "fever" as usual heading the list. Undoubtedly a very large number of deaths reported as fever are generally malarial, but as returns from hospitals are the only reliable ones it is difficult to state the true position. Chart 3.

It is practically certain, however, that genuine Malaria has had a much higher incidence during the year under review than previously owing most probably to the opening up of new lands by estates; and it is expected that for the next two years at least the incidence of Malaria will continue to be high, for it will require that period to bring about efficient drainage on plantations.

Throughout the year not a single case of dangerous infectious disease has been reported. Of the minor group, Measles and Chicken Pox have had the greatest incidence, both shewing an increase of 66 and 4 respectively on last year's figures.

Towards the end of the year, owing to an epidemic of Cholera, at Bangkok, Siam, which in Zulhajah (June—July) commenced to spread to Southern Siam and to become somewhat alarming, it was deemed wise, after consultation with the Federated Malay States and Straits Settlements authorities to introduce land quarantine at Padang Besar, the frontier railway station. There, a temporary camp was established both for contacts and for any cases which might have reached Padang Besar by rail and a careful inspection of 1st and 2nd class passengers carried out by an Assistant Surgeon, on all trains arriving at the frontier from Siam—3rd class passenger traffic having been previously closed down. In addition, all frontier roads and regular paths were carefully watched by the Police and arrangements were made for inspection of passengers and crew of small craft, plying between Siamese and Kedah ports.

Up to the time of writing of this report no Cholera cases have arisen in Kedah nor have any cases been reported in the Straits Settlements or Federated Malay States.

The only Helminthic disease of any consequence is Ankylostomiasis—the deaths from which for the year under review show an increase over the year 1343 by 393.

In Kedah where a considerable amount of land is low lying, and where soil pollution is undoubtedly great, this disease must have a high incidence; but it is well nigh impossible to obtain any true figures of the incidence with the limited staff of the Department.

Vital Statistics.

The estimated population is now given as 384,124, though this figure is possibly low.

The birth rate for 1344 calculated on the latter figure is

	29.52 per mille.
as compared with	29.69 per mille in 1343, and
	31.70 per mille in 1342.

The death rate for 1344 is 25.79 per mille, an increase of 2.77 on the previous year which was 23.02 per mille. As in previous years the death rate amongst Indians is the highest—the Tamil 'dependant' population on estates being chiefly affected.

Infant Mortality.

The rate for 1344 is 169.64 per mille as compared with 151.45 in 1343. The figure is not absolutely reliable, though registration is compulsory, but is probably nearer the truth than those furnished for previous years.

A step in the right direction was made early in the year to reduce the infant mortality rate by the appointment of a Lady Medical Officer, and it is hoped that as soon as this work can be properly organised it will be effective in bringing about a reduction in the infant mortality figure.

GENERAL EUROPEAN POPULATION in the State is estimated at 390. There were 2 deaths during the year giving a death rate of 5.12 per mille. The Health conditions have been good.

Officials.

The following table gives the Health Statistics of Government officials (other than subordinates) in Kedah.

	European.	Native.
Total number of officials resident	58	69
Average number resident	58	69
Total number on sick list	21	40
Total number of days on sick list	193	309
Average daily number on sick list	.54	.87
Percentage of sick to average number resident	36.20	57.97
Average number of days on sick list for each patient	9.19	7.72
Average sick time to each resident	3.32	4.47
Total number invalided	—	—
Percentage of invalidings to total residents	—	—
Total Deaths	—	2
Percentage of Deaths to total residents	—	2.89
Percentage of Deaths to average number resident	—	2.89
Number of cases sickness contracted away from resident	—	—

Sanitary Board Areas.

There are eight Sanitary Board Areas in Kedah (which are under the control of Sanitary Boards) namely :—

- a. Kota Star.
- b. Kuala Muda.
- c. Kulim.
- d. Bandar Bahru.
- e. Baling.
- f. Yen.
- g. Jitra.

and h. Island of Langkawi.

These Boards all employ Health Inspectors to carry out Sanitary work, except Langkawi, in the areas under their jurisdiction. In most cases however the Inspectors have a very elementary training in Public Health work, and in consequence the results obtained are poor. It is however hoped that in the near future the necessity for suitably qualified Inspectors for town work will assert itself.

Estate Figures.

The figures for estate health for 1343 were calculated on returns sent in to the Health Department by 368 estates. The European estates in that year numbered 70 but in 1344 they have increased to 85 and they included the bulk of the Tamil labourers employed in Kedah. This increase is due to activity in the opening up of forest lands for the planting of rubber.

III. HYGIENE AND SANITATION.

(a) 1. Preventive Measures:—

Malaria—larval surveys have been carried out in the immediate surroundings of the principal towns and in all cases where dangerous breeders have been found. Systematic oiling measures have been adopted. Such measures are being carried out at Alor Star, Sungei Patani and Kulim. In addition a number of surveys have been made by the staff of this Department on estates, where the Malarial incidence was particularly high, and advice was given to these estates as regards suitable measures to be adopted for the elimination of the breeding places. No difficulty as a rule has been encountered in getting suitable works carried out in so far as the European owned estates are concerned, but permanent anti-Malarial work on estates is difficult to carry out owing to lack in Kedah of personnel with experience in work of this sort.

An Anti-Malarial Board was established two years ago, for the purpose of making recommendations for permanent drainage work, chiefly in the vicinity of the towns, but up to the end of 1344 very little was accomplished by the Board, owing to the fact that the services of the Health Officer were only available as a whole-time officer for a small part of the time.

On estates showing a high Malarial incidence prophylactic quinine administration was recommended, and a number of pamphlets on Malaria were issued to Schools and the like.

EPIDEMIC DISEASES.

Vaccinations.

The number of vaccinations done during the year was as follows:—

District.	No. Vaccinated.
Kota Star	4,969
Kubang Pasu	1,853
Padang Trap	927
Yen	759
Langkawi	596
Kuala Muda	3,904
Baling	2,201
Sik	391
Kulim	2,026
Bandar Bahru	888
Total ...	18,514

2,508 of these were done by Dressers in the Government Hospitals and Dispensaries.

The cost per head of vaccination was approximately 26 cts. The vaccination work, though slow, has been fairly well done, and it is unusual to find a child over 6 months, even in the interior, who has not been vaccinated.

Helminthic Diseases.

Save in the towns and on estates, no preventive measures have been taken against these diseases.

In towns and on estates a nightsoil removal system is being gradually introduced, and on some of the large estates septic tanks for the labour force have been brought into use and are working satisfactorily. Most estates in Kedah which possess an estate hospital, carry out periodic stool examinations, and all infected persons receive appropriate treatment, principally with *Chenopodium*.

II. General Measures of Sanitation.

In the larger towns scavenging gangs are employed by the Sanitary Boards; and public dustbins are in use. These latter however are for the most part open wooden structures, many of which are in bad repair and give rise in consequence to nuisance. Improvements in scavenging measures are urgently required.

A number of refuse incinerators have been constructed in eleven of the larger towns and villages, but some of these now require to be enlarged, and small incinerators should be established in the smaller villages.

Sewage disposal in Alor Star, Sungei Patani, Kulim, and Bandar Bahru is carried out by the Sanitary Boards. All use the bucket system of removal, the sewage being trenched in plots some distance from the town. Not all the trenching grounds are satisfactory. This is particularly the case at Bandar Bahru, where the sub-soil water is very high.

III. School Hygiene.

The Health Officer personally visited five of the vernacular schools; the conditions found in these five are tabulated in the appendix of this report. The conditions in nearly all the schools approximate fairly closely to those found in 1343.

IV. Labour Conditions.

In the 1343 report labour conditions were dealt with very carefully, and a number of tables attached to the report are now included by the Protector of Labour Kedah in his departmental report. It is only proposed therefore to submit figures in connection with labour that possess a strictly Public Health interest.

The Health Officer paid 69 visits to estates throughout the year and 18 visits were paid by the Health Inspectors.

Charts 4 and 4a. The death rate for the entire estate population is 32.51 as compared with 25.37 per mille in 1343. The figures are obtained from 368 estates as compared with 251 in the previous year. The increase is chiefly in respect of native owned estates, but the information as regards health of labour force, provided by native owners has been proved over and over again to be most unreliable. Attention was drawn in the 1343 report by Dr. A. G. H. Smart to the absence of any defined scheme for the care of estates labourers and to the inadequacy of the medical supervision of estates.

This state of affairs still exists. It should be stated that not only the planting community but also the State is alive to the position of affairs, and an attempt has been made by Government to remedy matters by appointing an Estate Hospitals Board to consider the whole question.

The Board as at present constituted consists of the Health Officer, Kedah, as Chairman, and three members, one being the Protector of Labour, Kedah, and two nominated by the Kedah Planters' Association.

This Board has held several meetings and has submitted recommendations to Government for an Estate Hospitals Scheme. There are many difficulties to be encountered, especially financial ones, in introducing such a scheme; but it is hoped that these difficulties will be overcome and that Government will be able shortly to devise suitable measures.

The chart for admissions to Hospitals as in the previous year shows a marked rise during the last quarter (i.e., April to June). Chart 5.

In the year under review, however, it will be noted that the admission figures for all months of the periods are considerably greater than those of the corresponding months in 1343. The lowest recorded in any one month in 1343 was 88 in October, and in 1344 the lowest is 178 in February.

As stated elsewhere in this report, this great increase is undoubtedly due to the opening up of countless ravines, without at the same time carrying out proper drainage measures; a state of affairs that has occurred also in other Malayan States.

The Dysenteric curve is not only high but is more irregular than that for 1343; and this I think is explained by the facts that in newly opened areas sanitary arrangements and protected water supplies were conspicuous by their absence.

Both this Department and the Department of Labour have not failed to urge the necessity for protected water supplies and the establishment of latrines on these new properties; and except in very few cases prompt attention has been given to these matters by the estate owners concerned.

Reference to table K in the appendix will show that next to Malaria, Dysentery admissions to Hospitals are highest, 662 against 583 for 1343.

Ten recommendations for orders to the managers of Estates were made to the Labour Office.

(b) The only measures that can usefully be adopted at present for spreading the knowledge of Hygiene and Sanitation are, the issue from time to time of popular pamphlets or leaflets on various subjects, such, for example, as Malaria, Ankylostomiasis, etc. A number of such pamphlets have been printed in Tamil, Malay (Arabic Character), and Chinese, and have from time to time been distributed in the various centres of population.

It is hoped to be able to extend further afield during 1345.

(c) & (d) The Sanitary personnel of this Department are divided up into the following classes:—

- (a) Sub-Sanitary Inspectors.
- (b) Probationer Health Inspectors.
- (c) Health Inspectors.
- (d) Senior Health Inspector.
- (e) Sanitary Inspectors.

The (a) group are really probationers, who, if they show promise, are allowed to undergo a course of three months' training in Elementary Hygiene and Sanitation at Sungei Patani under the Health Officer and the Senior Health Inspector. The successful members are promoted, after examination, to the grade of Probationer Health Inspectors, and are then on probation for three years—at the end of which period they are recommended for promotion to the grade of Health Inspector, if their work and knowledge have been satisfactory.

The technical knowledge possessed by these Health Inspectors is very limited, owing chiefly to their being unable to speak and read English and to the limited amount of time which can be given to their training.

It is desirable that all Health Inspectors should eventually take the advanced course in Hygiene and Sanitation, conducted at Singapore, under the auspices of the Royal Sanitary Institute, London; but here again the difficulty of language is a bar, and the progress made therefore in all branches of Public Health work must continue to be slow.

This matter of the employment of fully trained and well qualified inspectors is one of the first steps required in Kedah, and it is hoped that this will not be lost sight of by Government.

IV. MATERNITY AND CHILD WELFARE.

I enclose the Lady Medical Officer's report, as this enables one to get a good idea of the amount of work done during the short time of 10 months.

I cannot speak too highly of the work done by the Lady Medical Officer. The difficulty of persuading Malays, especially women and children, to come for treatment is well known to any one who has worked among them for years.

Now the ice has been broken, I hope, as time goes on, to extend the work into the rural districts, by means of a travelling trained midwife, who will render assistance in maternity work, and instruct mothers in the care of children.

REPORT FOR THE YEAR 1344 A. H.

By Dr. H. M. Garlick,

Lady Medical Officer, Kedah.

1. With the end of the year 1344, the newly organised work amongst the women and children of North Kedah had been in existence for ten months.

During the period the number of patients attended has steadily increased and the work has gradually been extended in various directions, more especially with a view to getting in touch with the country Malays and outlying stations.

STAFF.

This consists of:—

- 1 Lady Medical Officer.
- 2 European Sisters.
- 2 Malay Midwives.
- 3 Ayahs.

PREMISES.

1. In Hospital.

Lady Medical Officer's Office and Examination room, Third Class Ward,
Second Class Maternity Ward and Labour Theatre.

2. In the Town.

Lady Medical Officer's Office and Examination room in the Town Dispensary.

3. Out Stations.

A room in Police Station or Dispensary used temporarily as office.

The Statistics obtained give indications as to the line along which the work can be developed so as to produce the best results, these points are:—

- 1. The number of Malays attended amounts to more than a third of the total.
- 2. The proportion of Malays to other nationalities is highest in the figures of visits, and lowest in those of offices.
- 3. The Maternity work is steadily increasing.

But apart from the figures there are certain other considerations which come into the practical work.

A. Office Work.

Though the returns from the various offices appear less satisfactory in some respects, it must be remembered that the time spent in these is relatively small, and amounts to about $\frac{1}{2}$ hour to 2 hours in the morning, and 1 hour in the afternoon.

This arrangement has two advantages while leaving the Lady Medical Officer free for other work.

1. It sets aside a definite time and place for patients to get in touch with the Lady Medical Officer, and this is most necessary, when for a greater part of the day she is out visiting and is therefore not available. The Hospital and the Town Dispensary, being some distance apart, are in touch with different districts, and more or less divide up morning and afternoon visits satisfactorily.

2. It gives the Lady Medical Officer a definite time for doing routine work, and for dealing with minor ailments, with greater rapidity.

B. Hospital Work.

As Inpatients of the Hospital a few Malay women are treated each month, and some are even willing to come for operation. Almost certainly the numbers will increase directly there is a separate ward for them, and as most of these patients are from the country they should be encouraged.

C. Visits.

This side of the work is essentially a much more personal matter, and it also uses up a great deal more time. It appears to be, however, by far the best means of getting in touch with the Malay people, and of familiarising them with scientific methods and with the benefits of medicine. It should be remembered also that advice or explanation given in one house is gradually propagated over the whole village, or even to neighbouring villages, without any further effort on the part of the Lady Medical Officer, and that therefore the real sphere of influence is wider than the apparent.

2. Maternity Cases.

In this work there appears to be the greatest hope for the future. It also requires a great deal of time and effort, but, besides benefiting individual women and children, it yields special opportunities, for explaining scientific methods to groups of people, and it leads to a willingness on the part of the women to seek advice for themselves and their children.

The advantages of scientific methods in maternity work are so very obvious, and both the women and infants are so much improved in health, that the women are becoming more and more willing to seek advice in these circumstances. It is a great advantage also that many of the old customs can be used to further antenatal and postnatal work as, for instance, the custom of engaging the midwife at the seventh month of pregnancy. Undoubtedly in the maternity work especially lies the greatest hope of producing an improvement in the general health of both women and children.

RETURNS.

1. Maternity Cases.

Out Patient.

	Malay.	Chinese.	Tamil.	Others.	Total.
a. Normal Delivery ...	24	6	8	—	38
b. Abnormal Cases ...	2	5	1	—	8
c. Ante Partum Cases ...	5	2	1	—	8
d. Post Partum Cases ...	6	3	2	—	11
e. Abortions ...	1	1	1	—	3
	—	—	—	—	—
Total	38	17	13	—	68
	—	—	—	—	—

2. Maternity Cases.

In Patient.

	Malay.	Chinese.	Tamil.	Others.	Total.
a. Normal Delivery ...	1	4	18	2	25
b. Abnormal Cases ...	—	3	6	1	10
c. Ante Partum Cases	}	Not known.			
d. Post Partum Cases					
e. Abortions					
	—	—	—	—	—
Total	1	7	24	3	35
	—	—	—	—	—

3. Attendances.

	Malay.	Chinese.	Tamil.	Others.	Total.
Office, Hospital	97	54	21	46	218
Office, Town	75	339	68	162	644
Visited	364	70	8	112	554
Out Stations	32	4	—	—	36
Hospital Inpatient	18	33	122	17	190
Total	586	500	219	337	1,642

4. Operations.

1. Craniotomy.
1. Removal Ovarian Cyst
1. Partial Amputation of foot for growth.
1. Cyst of neck.
1. Perineorrhaphy.
1. Ruptured Tubal Pregnancy.
2. Dilatation and curettage.
1. Cut hand.
1. Removal F. B. in nose.
1. Bartholin Abscess.
1. Removal of toe nail.

V. HOSPITALS AND DISPENSARIES.

The Kedah Medical Institutions in 1344 consisted of the

Hospital, Alor Star,	accommodation	360 beds.
„ Sungei Patani	„	300 „
„ Kulim	„	200 „
„ Kuala Ketil	„	150 „
„ Serdang	„	80 „
„ Bandar Bahru	„	30 „
„ Baling	„	40 „
„ Langkawi	„	50 „

The Gaols at Alor Star, Sungei Patani and Kulim have each a sick ward.

The Dispensaries are situated at

- Alor Star (Town)
- Changlon.
- Yen.
- Sik
- Kuala Muda
- Padang Serai.
- Mahang.
- Quarantine Station, Padang Besar.

In addition to the travelling Ambulance Dispensary, already working in North Kedah, a second Ambulance Dispensary was sanctioned for Central Kedah, and began its work towards the close of the year.

The Launch Dispensary which was working for some time in 1343 was not available.

Inpatients Treated.

Statistics of patients treated in the hospitals and Prison Sick Wards during the past 5 years are as follows:—

Year.	No. Treated.	Deaths.	Percentage of Deaths.
1340	13,018	898	6.89
1341	13,020	945	7.25
1342	13,657	1,021	7.48
1343	16,659	1,246	7.47
1344	21,336	1,503	7.04

(Charts 6 and 7)

Excluding 410 deaths which occurred within 48 hours of admission, the death rate was 5.12 per cent. The percentage of deaths occurring within 48 hours of admission was 26.7. The figure for cases admitted in a moribund state is very high; they nearly all came from Estates. This matter is receiving the attention of the Labour and Health Departments and already shews signs of improvement.

The totals treated in each hospital during 1344 and the number of deaths were as follows:—

Hospital.	No. Treated.	Deaths.	Percentage of Deaths.
Alor Star	3,783	228	6.02
Sungei Patani	7,227	491	6.79
Kulim	4,122	379	9.18
Kuala Ketil	3,004	224	7.45
Serdang	1,511	88	5.82
Bandar Bahru	755	52	6.88
Baling	475	26	5.47
Langkawi	210	9	4.28

Prison Sick Wards:—

Alor Star	160	3	1.87
Sungei Patani	67	2	2.98
Kulim	22	1	4.54
Total	21,336	1,503	7.04

The Nationalities of indoor patients were:—

Europeans	...	...	38
Eurasians	...	...	8
Malays	...	...	1,175
Chinese	...	...	5,816
Indians	...	...	14,087
Javanese	...	...	20
Japanese	...	...	8
Others	...	...	194
Total	...	...	21,336

All the Malay admissions, except those from Police, are voluntary. A large proportion of the Chinese patients are decrepits or chronic cases.

The average daily number of inpatients in the various hospitals was as follows:—

Hospitals.	1341.	1342.	1343.	1344.
Alor Star	196.05	174.57	207.87	203.91
Sungei Patani	164.29	227.22	271.02	320.76
Kulim	121.12	134.23	157.52	161.12
Kuala Ketil	109.23	105.90	100.86	145.79
Serdang	49.55	44.93	40.01	68.30
Bandar Bahru	27.14	19.96	22.92	35.56
Baling	17.70	12.68	12.21	17.70
Langkawi	15.25	12.00	6.45	11.91

Prison Sick Wards:—

Alor Star	4.68	6.40	9.46	7.68
Sungei Patani	2.42	2.81	1.58	2.44
Kulim	2.81	1.36	1.03	.06
Total	710.24	742.06	830.93	975.23

PREVAILING DISEASES.

Diseases.	1342			1343			1344		
	Cases	Deaths	Deaths %	Cases	Deaths	Deaths %	Cases	Deaths	Deaths %
Malaria	4511	288	5.05	5994	301	5.02	8209	419	5.10
Dysentery, Amoebic	407	67	16.46	427	88	20.60	466	97	20.81
Dysentery, Bacillary	663	138	20.81	615	123	20.00	731	155	21.20
Venereal Diseases	1052	18	1.71	1081	16	1.48	1174	22	1.87
Respiratory Diseases (other than P. Tuberculosis)	799	151	18.89	997	186	18.65	1128	221	19.59
Pulm. Tuberculosis	234	108	46.15	225	113	50.22	287	150	52.26
Ankylostomiasis	806	77	9.55	1221	128	10.48	1160	109	9.39
Ulcers	1052	9	.85	972	6	.61	1410	7	.49
Wounds	684	14	2.04	732	14	1.91	1043	8	.76
Other Diseases	3449	211	6.11	4395	271	6.16	5728	315	5.49
Total	13657	1021	7.48	16659	1246	7.47	21336	1503	7.04

Malaria.

Malaria as usual is the prevailing disease, and this year there has been a big increase in number. This occurred mostly from May to July (Shawal to Zulhaidjah) reaching the highest point in June (Zulkaidah) when there was a general increase in cases all over the country, and in all classes of people. Charts 8, 9 and 10, Appendix, shew in graphic form the Malaria admissions to Alor Star, Sungei Patani and Kulim Hospitals during the last three years. The number of cases treated was 8,209 against 5,994 in 1343 A.H. and 4,511 in 1342 A.H.

The total number of blood films examined for malaria in the various hospitals was as follows:—

Hospital.	M.T.	B.T.	Quartan.	Negative.	Total.
Alor Star ...	363	402	62	1,009	1,836
Sungei Patani ...	656	1,167	4	1,776	3,603
Kulim ...	630	466	20	2,935	4,051
Kuala Ketil ...	250	556	27	1,373	2,206
Serdang ...	203	365	3	759	1,330
Bandar Bahru ...	66	69	8	168	311
Baling ...	35	22	—	172	229
Langkawi ...	3	21	—	156	180
Total ...	2,206	3,068	124	8,348	13,746

Dysentery.

Amoebic Dysentery. 466 cases with 97 deaths, a rate per cent. of 20·81 against 427 cases and 88 deaths, a percentage of 20·60, during 1343 A.H.

Bacillary Dysentery. 731 cases with 155 deaths, a rate per cent. of 21·20 against 615 cases with 123 deaths, a percentage of 20·00, during 1343 A.H.

The increase in figures is very possibly not correct for, I am certain that many cases of malarial enteritis are diagnosed as dysentery.

There is an increase in the amount of cases of dysentery. Most of the cases came from newly opened Estates and the number will probably fall as these Estates improve their health conditions.

Respiratory Diseases.

This increase is again, I think, due to malaria; many cases of lung trouble being a complication to malaria.

362 cases of Pneumonia were treated with 149 deaths, a death rate percentage of 41·16 as against 408 cases and 150 deaths, a percentage of 38·28 during 1343 A.H.

The death rate in these cases is as usual high; it is very difficult to persuade the natives and even some Estate Managers of the importance of early treatment.

Veneral Diseases.

Gonorrhoea ...	324
Gonorrhoeal Sequelae ...	90
Primary Syphilis ...	76
Secondary Syphilis ...	366
Tertiary Syphilis ...	72
Syphilitic Sequelae ...	1
Chancre Soft ...	124
Bubo ...	121
Total ...	1,174

The time has not yet arrived for venereal clinics in Kedah, but every persuasion is used to induce people to come up early for treatment, and the travelling dispensaries are doing useful work in this direction.

Puru (Yaws).

7,723 injections of Neo Salvarsan were given during the year against 5,995 injections in 1343, 7,620 injections in 1342 and 1,183 injections in 1341 A.H.

Very few cases of yaws are admitted to Hospitals for treatment but cases came up freely for injections of N. A. B. Regular visits are made to outlying places by Medical Officers to give injections.

Pulmonary Tuberculosis.

287 cases were treated with 150 deaths, against 225 cases and 113 deaths in 1343 A.H. and 234 cases and 108 deaths in 1342 A.H. This disease appears to be on the increase among Malays who live in towns, especially those who occupy badly ventilated quarters made of wood or brick. The Malay invariably shuts all windows and doors all night and most of the day. An effort is being made to have all buildings made with Jack roofs and air inlets near floor level. The Special huts put up at Pulau Langkawi Hospital have been almost continually occupied, and the results have been very encouraging. Next year the building will be enlarged. 23 cases were admitted to Langkawi, all being well defined cases. 13 were discharged, 2 of these shewed no signs or symptoms on discharge and all the others had marked improvement.

Pregnancy and Its Diseases.

160 cases connected with pregnancy and its complications were treated in the hospitals with 18 deaths. In the whole State there were 177 deaths recorded under this heading giving a percentage of 1.46 to the total births (including still births).

Mental Diseases.

There were 113 Kedah patients under treatment in Tanjong Rambutan Mental Hospital at the beginning of the year. 57 were sent in during 1344; 21 were discharged as cured, 8 died, 4 absconded and the number remaining at the end of the year was 137.

Out-Door Dispensaries.

The number of cases attending the various Dispensaries was as follows:—

Place.	Cases 1343.	Cases 1344.
Alor Star (Town) ...	10,597	10,387
Changloon ...	4,392	4,035
Yen ...	1,118	2,502
Sik ...	811	1,246
Kuala Muda ...	1,348	1,498
Padang Serai ...	795	1,762
Mahang ...	356	504
Motor Ambulance Dispensary, Alor star ...	18,178	14,962
Motor Ambulance Dispensary, Sungei Patani from 6.10.44		1873
River Travelling Launch Dispensary (7 trips) ...	1,041	—
Total ...	38,636	38,769
Repetitions ...	7,860	5,734

The launch dispensary had to be given up, as it was found impossible to go up the river during the dry weather. The question of getting a more suitable boat is being considered and it is hoped to start again soon.

North and Central Kedah now have regular travelling Dispensaries to all roadside towns and villages. Next year it is hoped to do the same in South Kedah. The distance travelled by these Dispensaries was:—

North Kedah	...	6,303 Miles.
Central Kedah from 6.10.44	...	457 Miles.

The Nationalities treated were:—

		1343.	1344.
Malays	...	26,370	19,753
Chinese	...	6,519	7,917
Indians	...	4,360	8,522
Siamese	...	296	145
Others	...	1,091	2,432
Total	...	<u>38,636</u>	<u>38,769</u>

Infectious Diseases Treated in Hospitals.

		Cases.	Deaths.
Measles	...	179	5
Chicken-pox	...	18	—
Typhoid Fever	...	13	5
Erysipelas	...	6	3
Mumps	...	46	1
Hydrophobia	...	2	2
Septicaemia	...	4	4
Total	...	<u>268</u>	<u>20</u>

Leprosy.

	Remained	Admitted	Total	Discharged	Absconded	Transferred	Died	Remaining.
Pulau Jerjak	53	17	70	—	—	—	12	58
Pangkor Laut	5	4	9	—	—	—	—	9
Kedah Hospitals	11	55	66	13	13	21	10	9

General Hospital, Alor Star.

This Institution was under the charge of Dr. C. J. S. Nicholas, Assistant Surgeon, who has acted as Medical Officer, Alor Star, since 1.1.37. (1918).

The number of indoor cases treated during the year was 3,783. There were 228 deaths being a percentage of 6.02. Excluding 54 deaths which occurred within 48 hours of admission, the death-rate was 4.59 percent.

The daily average of inpatients was 203.91. The largest number of inpatients on one day was 236 on 9.11.44. The figures for 1343 were: Total cases 3,710; deaths 238; percentage of deaths 6.41; percentage of deaths excluding those occurring within 48 hours of admission 4.47; daily average 207.87.

Indoor patients according to Nationality:—

		No. Treated	Deaths.	Percentage of Deaths.
Europeans	...	14	—	—
Malays	...	497	12	2.41
Indians	...	1,750	67	3.83
Chinese	...	1,445	144	9.96
Others	...	77	5	6.49
Total	...	<u>3,783</u>	<u>228</u>	<u>6.02</u>

Patients From Estates.

The total admissions numbered 221 of whom 13 died (8.88 per cent.) 5 from Malaria, 1 from Ankylostomiasis, 1 from pneumonia, 6 from other causes.

Prevailing Diseases.

Diseases	1342			1343			1344		
	Cases	Deaths	Deaths %	Cases	Deaths	Deaths %	Cases	Deaths	Deaths %
Malaria	745	57	7.65	887	53	5.97	923	60	6.50
Dysentery, Amoebic	24	3	12.50	22	3	13.63	62	15	24.19
„ Bacillary	31	9	29.03	55	10	18.18	49	6	12.24
Venereal Diseases	396	5	1.27	472	9	1.90	423	9	2.12
Ulcers	406	2	.49	366	1	.27	464	3	.64
Ankylostomiasis	252	13	5.15	272	14	5.14	225	16	7.11
Respiratory Diseases (other than P. Tuberculosis)	159	33	20.75	196	33	16.83	152	18	11.84
Pulmonary Tuberculosis	71	32	45.07	87	41	47.12	75	43	57.33
Wounds	261	6	2.26	295	8	2.71	302	4	1.32
Other Causes	804	36	4.47	1148	66	5.74	1108	54	4.87
	3144	196	6.22	3710	238	6.41	3783	228	6.02

Malaria.—There has been an increase in admission this year at this Hospital as in nearly all Hospitals.

Dysentery.—The increase is probably due to unhealthy conditions on newly opened Estates.

Infectious Diseases.

	Cases.	Deaths.
Measles	7	1 (pneumonia).
Chickenpox	2	—
Mumps	10	1
Influenza	2	—
Total	21	2

The District was quite free from any severe infectious diseases.

The outbreak of Mumps occurred in a school.

Surgical Operations.

9 Major and 42 Minor operations were performed. Intravenous injections of N.A.B. to indoor patients numbered 1,443. These injections were mostly for syphilis.

Laboratory Work.

Blood Films examined for malaria—1836.

Benign Tertian	402
Malignant	363
Quartan	62
Negative	1,009

Total	1,836
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Other specimens (urine, sputum, faeces &c.) examined—4,502.

POST MORTEM EXAMINATIONS.

Police Cases	...	...	29
Hospital Cases	...	...	35
Total	...	...	64

Out-door Department.

Number of new cases	...	...	7,162
Repetitions	...	...	1,329
Total cases seen	...	...	8,491

The Nationalities who received treatment were:—

Malays	524
Indians	1,536
Europeans	1,171
Chinese	3,326
Others	605

Total	7,162
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2,521 injections were given for Puru (Yaws) and 2,075 injections for Syphilis.

Buildings.

These new wards, viz., the Surgical, Venereal Diseases, and Maternity wards, were completed and occupied.

Four new Dressers' quarters were built.

Revenue.

The revenue collected during the year amounted to \$4,149.30 as against \$3,690.99 in 1343 A.H.

The increase was due to the raising of Hospital fees for 3rd class from 40 cents to 85 cents. This rule came into force towards the latter part of the year.

SUNGEI PATANI HOSPITAL.

Dr. R. B. Hawes, Medical Officer, Central Kedah, was in charge, until he went on leave on 12.12.44. Dr. J. S. E. Manley succeeded him.

The number of indoor cases treated during the year was 7,227. There were 491 deaths, being a percentage of 6.93. Excluding 162 deaths which occurred within 48 hours of admission, the death rate was 4.55 per cent.

The daily average of inpatients was 320.76.

The largest number of inpatients on one day was 490 on 30.11.44. This occurred during the outbreak of malaria.

The percentage of Deaths is an improvement on last year and is satisfactorily low.

The figures for 1343 were: Total cases 5,184, deaths 457, percentage of deaths 8.81, percentage excluding deaths within 48 hours 6.93, daily average 271.02.

Indoor Patients according to Nationality.

	No. Treated.	Deaths.	Percentage of Deaths.
Europeans	12	1	8.33
Malays	194	9	4.63
Indians	2,062	162	7.85
Chinese	4,893	315	6.43
Others	66	4	6.06
Total	5,227	491	6.93

Patients from Estates.

The total admissions numbered 3,403 of whom 264 died (7.75 per cent.)—67 from malaria, 16 from Ankylostomiasis, 43 from dysentery, 5 from other bowel diseases, 53 from Pneumonia, 80 from other causes.

91 died within 48 hours of admission to Hospital.

Prevailing Diseases.

Diseases.	1342			1343			1344		
	Cases	Deaths	Death %	Cases	Deaths	Death %	Cases	Deaths	Death %
Malaria	1627	68	4.17	1996	91	4.55	2055	134	4.38
Dysentery, Amoebic	168	20	11.90	85	24	28.23	104	23	22.11
„ Bacillary	125	22	17.60	146	38	26.02	216	54	25.00
Veneral Diseases	483	8	1.65	280	2	.71	298	6	2.01
Ulcers	285	1	.35	231	...	...	456	...	...
Ankylostomiasis	182	30	16.48	360	69	19.16	233	28	12.01
Respiratory Diseases (other than Pulm. Tuberculosis)	261	51	19.54	366	82	22.40	350	86	24.57
Pulm. Tuberculosis	97	41	42.26	60	34	56.66	73	34	46.57
Other Causes	1189	83	6.98	1660	117	7.04	2442	126	5.16
	4417	324	7.34	5184	457	8.81	7227	491	6.93

The increase in admission for malaria is marked as is the case in other Hospitals.

Infectious Diseases.

	Cases.	Deaths.
Chicken-pox ...	8	—
Measles ...	134	2 (Pneumonia).
Typhoid fever ...	11	5
Erysipelas ...	3	3
Influenza ...	56	—
Hydrophobia ...	2	2
Septicaemia ...	4	4

The cases of hydrophobia occurred on Estates. No notice apparently was taken of the dog bite until the case developed hydrophobia.

Surgical Operations.

37 major and 388 minor operations were performed. Intravenous injections to indoor patients numbered 1253 mostly for syphilis.

Laboratory Work.

Blood films examined for malaria: 3,603.

Benign Tertian ...	...	1,167
Malignant tertian ...	...	656
Quartan ...	...	4
Negative ...	...	1,776
Total ...		<u>3,603</u>

Other specimens, sputum, faeces, urine, etc., examined: 6,892.

POST MORTEM EXAMINATIONS.

Police cases ...	...	36
Hospital cases ...	...	30
Total ...		<u>66</u>

Out-door Department.

Number of new cases ...	...	7,787
Repetitions ...	...	489
Total cases seen ...		<u>8,276</u>

The nationalities who received treatment were:—

Malays ...	...	2,684
Indians ...	...	2,404
Chinese ...	...	1,861
Europeans ...	...	536
Others ...	...	302
Total ...		<u>7,787</u>

2,894 injections were given for Puru (Yaws) and 1,025 injections for syphilis. A travelling Dispensary was started on 6.10.44 and attended to 1,873 cases.

Buildings.

Two Dressers' quarters, a Maternity ward and a Second Class ward were completed and occupied. A shed for the motor ambulance was constructed.

Revenue.

The revenue collected during the year amounted to \$20,599.98 as against \$15,731.38 in 1343 A.H.

This increase was due to the raising of the 3rd class ward charge.

KUIJIM HOSPITAL.

Dr. J. Portelli, Medical Officer, South Kedah, was in charge until he proceeded on leave on 16.10.44. He was succeeded by Dr. J. S. E. Manley. Dr. Manley was transferred to Central Kedah on 12.12.44 and Dr. W. Lupton succeeded him in South Kedah on 14.1.45.

The number of indoor cases treated during the year was 4,122. There were 379 deaths being a percentage of 9.18. Excluding 87 cases which proved fatal within 48 hours of admission, the death rate was 7.23 per cent.

The death rate in this Hospital is high and the percentage dying within 48 hours of admission (22.9) is marked. The deaths were mostly among Estate coolies (242). These cases are often sent in in a dying state; other cases are sent to hospital in a chronic condition.

The daily average of inpatients was 161.12. The highest number on one day was 269 on 28.11.44 during the malaria outbreak.

The figures for 1343 were: Total cases 3,321, deaths 289, percentage of deaths excluding those within 48 hours of admission 7.03, daily average 157.52.

Indoor Patients According to Nationality.

	No. Treated	Deaths.	Percentage of Deaths.
European ...	2	—	—
Malays ...	168	4	2.38
Indians ...	2,711	266	9.81
Chinese ...	1,223	107	8.74
Others ...	18	2	11.11
Total ...	4,122	379	9.18

Patients From Estates.

The total admissions numbered 1,783 of whom 242 died (13.57 per cent.)—47 from Malaria, 26 from Ankylostomiasis, 70 from Dysentery, 14 from other Bowel Diseases, 30 from Pneumonia, 55 from other Diseases. The health on some of the Estates in this district is very bad, and cases are often sent into Hospital too late. Several complaints have been made to the proper authority about this condition of affairs and steps are being taken to remedy it.

Prevailing Diseases.

Diseases.	1342			1343			1344		
	Cases	Deaths	Deaths %	Cases	Deaths	Deaths %	Cases	Deaths	Deaths %
Malaria	757	62	8.19	1336	85	6.36	1525	89	5.83
Dysentery, Amoebic	131	31	23.66	175	34	19.25	194	39	20.10
„ Bacillary	278	53	19.06	216	45	20.83	145	44	29.65
Venereal Disease	121	5	4.13	175	2	1.14	217	9	4.14
Ulcers	131	5	3.84	172	5	2.90	238	..	..
Ankylostomiasis	59	11	18.64	248	22	8.87	393	24	6.10
Respiratory Diseases (other than Pulm. Tuberculosis)	90	27	30.00	127	25	19.68	279	59	21.14
Pulm. Tuberculosis	40	24	60.00	42	24	57.14	68	46	67.64
Other Causes	613	33	5.38	830	47	5.66	1063	69	6.49
	2220	251	11.30	3321	289	8.70	4122	379	9.18

The increase in Malaria cases is in keeping with other districts and the increase in lung disease is probably secondary to the Malaria increase.

Infectious Diseases.

	Cases.	Deaths.
Chickenpox	1	—
Septicaemia	1	—

The District was extraordinarily free from infectious diseases.

Surgical Operations.

57 Major and 510 Minor operations were performed.

Laboratory Work.

Blood films examined for malaria:—

Benign Tertian	466
Malignant Tertian	630
Quartan	20
Negative	2,935
Total	4,051

Other Specimens, sputum, faeces, urine, etc., examined:— 5,192.

Post Mortem Examinations:—

Police cases	...	...	...	35
Hospital cases	...	...	...	8
				43
			Total ...	43

Outdoor Department.

Number of new cases	...	...	...	4,435
Repetitions	...	...	...	760
				5,195
			Total cases seen ...	5,195

The Nationalities who received treatment were:—

Malays	...	...	...	822
Indians	...	...	...	1,537
Chinese	...	...	...	1,324
Europeans	...	...	...	154
Others	...	...	...	598
				4,435
			Total ...	4,435

1,134 Injections of Neo-Salvarsan were given. Most of these injections were for Puru (Yaws).

Buildings.

A Maternity ward and a Second class ward were completed and occupied.

Revenue.

The revenue for the year amounted to \$10,704.17 as compared with \$10,205.65 for 1343 A.H.

KUALA KETIL HOSPITAL.

Special Grade Dresser, V. Veerakathy Pillai, was in charge of this Hospital, except during his vacation leave from 12.5.44 to 15.11.44 when First Grade Dresser, P. R. Madhavan Pillai, acted. The Medical Officer, Central Kedah, supervised.

The total number of indoor cases treated during the year was 3,004, the number of deaths was 224, or a percentage of 7.45. The death rate excluding 62 deaths which occurred within 48 hours of admission was 5.39.

The daily average of inpatients was 145.79. The largest number of inpatients on one day was 259 on 30.11.44.

The figures for the previous year were:—Total cases 2,117, deaths 148, percentage of deaths 6.99. Percentage excluding deaths within 48 hours of admission 4.42, daily average of inpatients 100.86.

The Nationalities of inpatients were:—

	Total Treated	Deaths.	Percentage of Deaths.
Indians	2,563	191	7.45
Chinese	397	33	8.31
Malays	27	—	—
Others	17	—	—
	3,004	224	7.45
Total ...	3,004	224	7.45

The larger proportion of patients at this Hospital are Estate coolies, 62 or 27.6 per cent. deaths occurring within 48 hours of admission is due to Estates often sending in coolies in a collapsed state, and too late to give much chance of treatment.

Patients from Estates.

2,261 patients were admitted from Estates, of whom 174 died or a percentage of 7.69: 67 from Malaria, 15 from Ankylostomiasis, 26 from dysentery, 2 from other bowel diseases, 1 from pneumonia and 63 from other diseases.

Prevailing Diseases.

	Total Treated	Deaths.	Percentage of Deaths.
Malaria ...	1,473	82	5.56
Dysentery, Amoebic ...	58	12	20.68
Dysentery, Bacillary ...	100	16	16.00
Venereal Diseases ...	92	2	2.17
Ankylostomiasis ...	105	26	24.76
Respiratory Diseases (other than Pulm. Tuberculosis) ...	161	32	19.87
Pulmonary Tuberculosis ...	28	13	46.43
Ulcers ...	113	1	.88
Wounds ...	103	1	.97
Other Diseases ...	771	39	5.06
Total ...	3,004	224	7.45

Malaria and its frequent complication, Respiratory diseases, were the prevailing diseases and also accounted for a large proportion of the deaths.

Laboratory Work.

Blood Films examined for Malaria:—

Malignant Tertian ...	250
Benign Tertian ...	556
Quartan ...	27
Negative ...	1,373
Total ...	2,206

Other Specimens examined:—

Stools ...	3,063
Urine ...	432
Sputum ...	129
Scrapings and Discharges ...	53
Total ...	3,677

Post mortem:—

Police cases ...	6
Others ...	29

Infectious Diseases.

Chickenpox	...	...	3	—
Erysipelas	...	...	1	—
Influenza	...	...	3	—
Measles	...	...	33	2
Septicaemia	...	...	1	—
Total	...	...	<u>41</u>	<u>2</u>

Outdoor Cases.

1,551 cases were treated and 100 repetitions.

The Nationalities who received treatment were:—

Malays 206, Indians 879, Others 63.

521 Injections of Neo-Salvarsan were given for Puru and Syphilis.

Buildings.

A Maternity ward which is still under construction ought to have been completed during the year.

Revenue.

The revenue collected during the year was \$11,895.89 as against \$8,766.47 for 1343 A.H. The increase is due to the raising of the Hospital fee.

Serdang Hospital.

Special Grade Dresser R. Subakrishnan was in charge. The total number of indoor cases treated during the year was 1511, the number of deaths was 88 being a percentage of 5.82 to total treated. Excluding 19 deaths which occurred within 48 hours of admission, the rate was 4.56 percent.

The daily average of inpatients was 68.30.

The largest number of inpatients on one day was 94 on 3.11.44.

The figures for the previous year were: Total cases 1038, deaths 49, percentage of deaths 4.72, per cent excluding deaths within 48 hours 3.66, daily average of inpatients 40.01.

The Nationalities of Inpatients were:—

	Total Treated	Deaths	Percentage of Deaths.
Indians	1,206	68	5.63
Chinese	286	18	6.20
Malays	6	—	—
Others	13	2	15.38
Total...	<u>1,511</u>	<u>88</u>	<u>5.82</u>

Patients from Estates.

967 patients were admitted from Estates of whom 61 died or a percentage of 6.30: 13 from Malaria, 9 from Ankylostomiasis, 22 from Dysentery, 3 from other bowel diseases, 1 from Pneumonia and 13 from other Diseases.

Prevailing Diseases.

	Total Treated	Deaths	Percentage of Deaths.
Malaria	661	20	3.02
Dysentery, Amoebic	23	6	26.08
.. Bacillary	115	22	19.13
Venereal Diseases	61	—	—
Ankylostomiasis	117	11	9.40
Respiratory Diseases (other than Pulm. Tuberculosis)	93	8	8.60
Pulmonary Tuberculosis	9	5	55.55
Ulcers	41	—	—
Wounds	50	—	—
Other Diseases	341	16	4.69
Total	<u>1,511</u>	<u>88</u>	<u>5.82</u>

Malaria as in other Districts was the prevailing disease, but the percentage of deaths was small. Dysentery and Ankylostomiasis are more prevalent in this District most probably on account of the low lying land.

Laboratory Work.

Blood Films examined for Malaria :—

Malignant Tertian	...	203
Benign Tertian	...	365
Quartan	...	3
Negative	...	759
		<u>1,330</u>

Other Specimens examined :—

Stools	...	1,063
Urine	...	30
Sputum	...	37
Scrapings and Discharges	...	17
		<u>1,147</u>

Post Mortems :—

Police cases	...	4
Other cases	...	4

Infectious Diseases treated in the Hospital :—

	Cases.	Deaths
Measles	3	—

Outdoor Cases.

775 cases were treated and 193 repetitions.

The Nationalities who received treatment were :—

Europeans 7, Chinese 370, Indians 300, Malays 86, Others 12.

Buildings.

The well was deepened.

Revenue.

The revenue amounted to \$5325.99 as against \$2,497.10 in 1343 A. H.

Increase due to fees being raised.

Bandar Bahru Hospital.

First Grade Dresser, M. D. Rajamoney was in charge, under the supervision of the Medical Officer, South Kedah.

The total number of inpatients during the year was 755, deaths numbered 52, being a percentage of 6.88. Excluding 20 deaths which occurred within 48 hours of admission, the death rate was 4.23 percent. About half the admission were Estate coolies.

The daily average of inpatients was 35.56. The largest number of sick on one day was 50 on 28. 10. 44.

The figures for the previous year were : Total cases 466, deaths 24, percentage of deaths 5.15, percentage excluding deaths within 48 hours of admission 4.29, daily average 22.92.

The Nationalities treated were :—

	Total Treated	Deaths	Percentage of Deaths,
Indians	604	44	7.28
Chinese	120	7	5.83
Malays	28	—	—
Others	3	1	33.33
	<u>755</u>	<u>52</u>	<u>6.83</u>

Patients from Estates.

There were 354 admissions from Estates, of whom 25 died or a percentage of 7.06 : 9 from Malaria, 1 from Ankylostomiasis, 2 from Dysentery, 3 from Pneumonia, 10 from other Diseases.

The number of admissions during 1343 was 197 and deaths 14.

The increase in admissions of Estate coolies was partly due to the increase of labour forces, but mostly due to the large amount of Malaria cases in June.

Prevailing Diseases.

	Total Treated	Deaths	Percentage of Deaths.
Malaria	251	11	4.38
Dysentery, Amoebic	5	—	—
" Bacillary	44	11	25.00
Veneral Diseases	42	1	2.38
Respiratory Diseases (other than Pulm.			
Tuberculosis.	44	10	22.72
Pulm. Tuberculosis	6	4	66.66
Ankylostomiasis	64	3	4.68
Ulcers	22	—	—
Wound	72	—	—
Other diseases	205	12	5.85
Total	755	52	6.88

Malaria, Dysentery, and Lung diseases accounted for most of the cases. Most of the lung cases were secondary complaints to Malaria cases.

Laboratory Work.

A total of 741 specimens were examined.

1 Post mortem was made for the Police.

Outdoor Patients.

1,065 cases were treated and the repetitions numbered 302. The nationalities who received treatment were:—

Chinese	...	350
Malays	...	280
Indians	...	418
Others	...	11
Total	...	1,059

Revenue.

The revenue for the year was \$2,790.22 as against \$1,451.01 in 1343 A.H. The increase as in other Hospitals was due partly to increased number of admissions and partly to the higher rate charged for Estate coolies.

Baling Hospital.

Second Grade Dresser, Osman bin Yahaya, was in charge of this Hospital until the middle of the year, when he was transferred to Sungei Patani to undergo training for the First Grade Examination. First Grade Dresser, V. Raghava Pillai, was in charge from 1.6.44 to the end of the year. The Medical Officer, Central Kedah, supervised.

The number of inpatients treated during the year was 475, the number of deaths was 26 being a percentage of 5.47. Excluding 5 deaths which occurred within 48 hours of admission, the death rate was 4.42 percent.

The daily average of inpatients was 17.70 and the largest number of patients on one day was 33 on 24.2.44.

The figures for the previous year were: Total cases 400, deaths 19, percentage of deaths 4.75, percentage excluding deaths within 48 hours of admission 4.00, daily average of patients 12.21.

The following were the Nationalities treated:—

	Cases.	Deaths.	Percentage of Deaths.
Indians	226	9	3.98
Chinese	152	13	8.55
Malays	83	3	3.61
Others	14	1	7.14
	<u>475</u>	<u>26</u>	<u>5.47</u>

The increase in Malay admissions is satisfactory: 12 in 1342, 57 in 1343 and 83 in 1344.

Patients from Estates.

29 cases were admitted from Estates, of whom 2 died, against 13 admissions and 3 deaths during 1343.

Prevailing Diseases.

	Cases	Deaths	Percentage of Deaths
Malaria	216	12	5.55
Dysentery, Amoebic	6	1	16.66
.. Bacillary	10	—	—
Venereal Diseases	19	2	10.52
Respiratory Diseases (other than Pulm. Tuberculosis)	21	4	19.04
Pulm. Tuberculosis	4	2	50.00
Ankylostomiasis	10	—	—
Ulcers	76	—	—
Wounds	33	—	—
Other Diseases	80	5	6.25
	<u>475</u>	<u>26</u>	<u>5.47</u>

Laboratory Work.

671 Specimens were examined.

5 Post mortems were performed including 3 pathological and 2 medicolegal cases.

Outdoor Patients.

6,246 new cases were treated and the repetitions numbered 1,651. The figures for 1343 were 3,885 cases and 714 repetitions.

The Malays in this District came for treatment and medicine freely,

The Nationalities were:—

Malays	...	4,255
Chinese	...	755
Indians	...	1,107
Others	...	129
Total	...	<u>6,246</u>

Revenue.

The revenue collected during the year amounted to \$514.13 as against \$256.00 during 1343 A. H.

Langkawi Hospital.

This Hospital was under the charge of Second Grade Dresser, P. Gabriel, during the first half of the year, and First Grade Dresser, K. Ayadurai, during the second half.

The total number of inpatients treated during the year was 210. The number of deaths was 9 or a percentage of 4.28. Excluding 1 death which occurred within 48 hours of admission, the percentage was 3.80.

The daily average number of inpatients was 11.91.

The figures for the previous year were: Total cases 106, deaths 5, percentage of deaths 4.71. Percentage excluding deaths within 48 hours 2.83. Daily average of inpatients 6.45.

The following were the Nationalities treated:—

	Cases.	Deaths.	Percentage of deaths.
Malays	53	1	1.88
Chinese	45	5	11.11
Indians	106	3	2.83
Others	6	—	—
	<u>210</u>	<u>9</u>	<u>4.28</u>

Patients from Estates.

61 cases were admitted of whom 1 died. The admissions for 1343 were only four. This increase is due to opening up of a rubber Estate and employment of Indian labour.

Prevailing Diseases.

	Cases.	Deaths.	Percentage of deaths.
Malaria	42	—	—
Dysentery, Amoebic	6	—	—
.. Bacillary	7	2	28.57
Venerical Diseases	17	—	—
Respiratory Diseases (other than			
Pulm. Tuberculosis	14	1	7.14
Pulmonary Tuberculosis	23	3	13.43
Ankylostomiasis	6	1	16.66
Ulcers	8	—	—
Wounds	19	—	—
Other Diseases	68	2	2.94
Total	<u>210</u>	<u>9</u>	<u>4.28</u>

Pulmonary Tuberculosis.

The Phthisis huts were occupied the whole year. Of the 13 cases discharged, 2 were apparently cured, and 5 showed very marked improvement but would not stay to continue treatment the other 6 left too soon after admission for any change to be noticed. The Nationalities of the cases were: Malays 17, Tamil 1, Eurasian 1, Bengali 1.

There were 3 deaths, two Chinese and one Malay, of patients who came in at a very advanced stage of the disease.

The results are very encouraging and it has been decided to build another ward of approved pattern next year.

Laboratory Work.

548 Specimens were examined.

Outdoor Cases.

2,339 fresh cases were treated and the repetitions numbered 570. The Nationalities who received treatment were : Malays 1,283, Chinese 505, Tamils 417, Others 135.

366 injections of Neo-Salvarsan were given for Puru.

Revenue.

Revenue amounted to \$352.64 as against \$55.60 during 1343 A. H. This increase is due to the employment of Tamil labour on the new Estate.

(VI)

Prisons.

There are 3 Prisons in the State, situated at Alor Star, Sungei Patani and Kulim, each having a sick ward.

The Central Prison at Alor Star, employs a whole time Dresser, while the Prisons at Kulim and Sungei Patani are attended daily by a dresser from the hospital.

The number of prisoners who received indoor treatment in the Sick Wards was as follows :—

	No. Treated.	Deaths	Percentage of Deaths.
Alor Star ...	160	3	1.87
Sungei Patani ...	67	2	2.98
Kulim ...	22	1	4.54
Total ...	<u>249</u>	<u>6</u>	<u>2.41</u>

The number treated during 1343 was 317 with 17 deaths, the percentage of deaths being 5.36.

No outbreaks of any sort occurred in the Prisons during the year ; the health of the prisoners was good.

Prevailing Diseases.

Diseases.	1343			1344		
	Cases.	Deaths.	Deaths %	Cases.	Deaths.	Deaths %
Malaria ...	50	...	...	44	...	...
Dysentery, Amoebic ...	9	1	11.11	8	1	12.50
" Bacillary ...	53	7	13.20	45	...	...
Other Bowel Diseases ...	63	2	3.17	34	...	...
Ankylostomiasis ...	22	2	9.09	6	...	...
Veneral Diseases ...	13	...	...	13	...	...
Abscess ...	18	...	...	18	...	...
Pulmonary Tuberculosis ...	4	3	75.00	1	1	100.00
Respiratory Diseases ...	26	...	...	17	3	17.64
Other Than P. Tuberculosis ...	...	...	...	...	...	...
Other Diseases ...	59	2	3.39	63	1	1.58
Total ...	<u>317</u>	<u>17</u>	<u>5.36</u>	<u>249</u>	<u>6</u>	<u>2.57</u>

Many of the malaria cases were admitted to the prison with fever.

Bacillary Dysentery and Bowel Diseases are I am afraid often diagnosed in cases of malingering, and as there are never any deaths from these cases, they must not be taken very seriously.

The daily average of inpatients was :—

	1343		1344	
	Daily No. of Prisoners	Daily No of Inpatients	Daily No. of Prisoners	Daily No of Inpatients
Alor Star ...	404	9.46	363	7.68
Sungei Patani ...	72	1.58	50	2.44
Kulim ...	27	1.03	28	.06
Total ..	<u>503</u>	<u>12.07</u>	<u>441</u>	<u>10.18</u>

Dispensary attendances totalled 14,978 and 9,203 repetitions. These figures include the administration of quinine to all prisoners during periodical inspections.

APPENDIX. VITAL STATISTICS.

(A) The Population of Kedah for 1344 A.H. is estimated at 384,124 as against 375,500 for 1343 A.H.

The following is a comparative table for the last 12 years :—

Year.	Estimated Population.	Births.	Birth-rate per mille.	Deaths.	Death-rate per mille.
1333	258,000	6,584	25.23	6,039	19.50
1334	273,000	6,937	25.41	5,463	20.00
1335	285,000	8,030	28.17	6,646	23.32
1336	290,000	7,902	27.25	6,299	21.72
1337	300,000	9,102	30.34	11,548	38.49
1338	325,000	9,593	29.51	8,557	26.14
1339	338,558	10,153	29.99	8,718	25.75
1340	340,000	10,305	30.30	8,656	25.40
1341	341,596	9,454	27.73	7,834	23.41
1342	350,000	11,095	31.70	7,877	22.41
1343	375,500	11,152	29.69	8,647	23.02
1344	384,124	11,342	29.52	9,910	25.79

The excess of Births over Deaths was 1,432 on the figures shown for the previous year.

There has been an increase of 6,490 *Estate Labourers* (Immigrants, all Estates. Figures supplied by Labour Department).

There has been an increase of 662 Dependants, (Health Office figures), on European Estates only.

(B). Population according to races with deaths and death-rate :—

Races.	Approximate Population.	Deaths.	Death-rate per mille.
Eurasians ...	152	1	6.57
Europeans ...	390	2	5.12
Chinese ...	64,680	2,059	31.83
Malays ...	265,935	5,691	21.39
Indians ...	44,035	1,899	43.12
Others ...	8,932	258	28.88

(C). There were 1,924 deaths among Infants up to one year old against 1,689 during 1343 A.H. The rate being 169.63 per thousand births, against 151.45 in 1343.

Infantile Death rate for the last 7 years was:—

Year.	Deaths.	Rate per Mille.	Age One Year and Under.
1338	1,312	136.76	
1339	1,980	194.98	
1340	1,704	165.35	
1341	1,530	161.73	
1342	1,401	126.27	
1343	1,689	151.45	
1344	1,924	169.64	

The Infantile death rate per thousand births, among the principal nationalities was:—

Malays.	Chinese.	South Indians.
142.93	166.18	485.44

(D). Births according to Sex and Nationality:—

Nationality.	Males.	Females.	Total.
Europeans ...	1	1	2
Eurasians ...	2	1	3
Chinese ...	914	825	1,739
Malays ...	4,408	4,218	8,626
South Indians ...	393	363	756
North Indians ...	18	8	26
Others ...	105	85	190
Total ...	<u>5,841</u>	<u>5,501</u>	<u>11,342</u>

(E). Still Births according to Sex and Nationality:—

Nationality.	Males.	Females.	Total.
Europeans ...	—	—	—
Eurasians ...	—	—	—
Chinese ...	56	31	87
Malays ...	277	243	520
South Indians ...	76	68	144
North Indians ...	—	—	—
Others ...	8	10	18
Total ...	<u>417</u>	<u>352</u>	<u>769</u>

(F). Distribution of Deaths according to Nationality and Diseases:—

Diseases.	Europeans.	Eurasi-ans.	Chinese.	Malays.	South Indians.	North Indians.	Others.	Total.
Fever	1,100	3,131	732	11	147	5,131
Bowel Diseases	133	193	339	2	18	685
Lung "	286	299	293	4	29	911
Old Age	1	65	533	37	2	13	651
Convulsions (Infantile)	188	847	203	...	18	1,256
Ankylostomiasis	83	420	91	4	12	610
Nervous Diseases	20	13	2	...	...	35
Deaths after abortion & child birth	27	128	18	...	4	177
Venereal Diseases	5	7	6	...	...	18
Cardiac Diseases	1	2	7	...	...	10
Leprosy	2	...	1	...	...	3
Beri Beri	1	...	...	...	...	1
Other Causes ...	2	...	138	118	144	3	17	422
Total ...	2	1	2,059	5,691	1,873	26	258	9,910

(G) Deaths according to Sex and Nationality.

Nationality.	Males.	Females.	Total.
Europeans ...	2	—	2
Eurasi-ans ...	—	1	1
Chinese ...	1,602	457	2,059
Malays ...	3,012	2,679	5,691
South Indians ...	1,052	821	1,873
North Indians ...	25	1	26
Others ...	144	108	258
Total ...	5,837	4,067	9,910

(H) Incidence of deaths according to ages and nationality:—

Age.	Europeans.	Eurasi-ans.	Chinese.	Malays.	S. Indias.	N. Indias.	Others.	Total.
1 year and under ...	...	...	289	1,233	367	1	34	1,924
5 years and under ...	...	...	161	1,061	349	...	33	1,604
15 do ...	...	...	120	553	155	1	18	847
25 do ...	...	...	167	434	224	2	19	846
35 do ...	1	...	282	456	380	3	30	1,152
45 do ...	...	...	401	432	194	5	33	1,065
55 do ...	1	...	315	354	95	9	26	800
65 do ...	...	...	224	397	62	2	26	711
75 do ...	...	...	73	308	31	2	25	439
100 do ...	...	1	26	428	16	1	14	486
Over 100 years ...	...	...	1	35	...	...	...	36
Total ...	2	1	2,059	5,691	1,873	26	258	9,910

(I).

ESTATE STATISTICS.

Total Estate Population (calculated on 368 Estates sending in Returns regularly, of which 85 are European owned).

Estate Population.	Deaths.	Death-rate Per Mille Per Annum.
Labourers and Dependents. 48,931	Lab: & Dep: 1,591	32.51

INDIAN ESTATE POPULATION.

Indian Estate Population.	Indian Deaths.	Death-rate per Mille Per Annum.
Population (Lab: and Dep:) 31,746	Lab: & Dep: 1,397	44.00

(J). Infectious Diseases Reported to Health Office.

Measles	...	159
Chicken-pox	...	26
Typhoid Fever	...	7
Cerebro Spinal Meningitis	...	3
Mumps	...	9
Enteric Fever	...	1
Para Typhoid	...	2
Whooping Cough	...	8

Estate Admissions to Government Hospitals by Diseases, According to Districts, With Deaths.

Districts	Malaria,		Ankylostomiasis.		Dysentery.		Other Bowel Diseases		Pneumonia		Other Diseases	
	A.	D. %	A.	D. %	A.	D. %	A.	D. %	A.	D. %	A.	D. %
Alor Star	57	5.9	43	1.2	4	...	3	...	2	1.50	112	6.5
Sungei Patani	1365	67.5	130	16.12	206	43.20	52	5.10	127	53.42	1521	80.5
Kulim	623	47.8	262	26.10	239	70.29	104	14.13	59	30.51	425	55.11
Kuala Ketil	1143	67.6	77	15.19	89	26.29	2	2.100	4	1.25	946	63.7
Serdang	381	13.3	92	9.10	97	22.23	25	3.12	8	1.13	264	13.4
Bandar Bahru	115	9.8	37	1.3	15	2.13	31	1.3	13	3.23	143	9.6
Baling	14	...	1	...	4	...	...	...	1	1.100	9	1.11
Langkawi	17	...	3	...	8	...	3	...	...	...	30	1.3
Total	3715	208.5.60	645	68.10.54	662	163.24.62	220	25.11.36	214	90.42.06	3621	228.6.30

(L).

SCHOOL WORK.

Visit to Schools.

5 schools were visited as follows:—

		Percentage.
Total Pupils in Register	... 511	—
Total seen	... 406	—
Enlarged Spleen	... 13	3.2
Obvious Anaemia	... —	—
Pupils showing no vaccination marks	... 52	12.80
Ear Diseases	... —	—
Eye Diseases	... 2	.49
Skin Diseases	... 4	.99
Puru (Yaws)	... 17	.42

(M).

Total Estate Labourers and Dependents admitted
to Government Hospitals, with Deaths, by
months.

Months.	Admissions.	Deaths.	Rate Percent.
July	... 722	66	9.14
August	... 707	62	8.77
September	... 634	49	7.73
October	... 717	72	10.04
November	... 695	73	10.50
December	... 717	69	9.62
January	... 624	49	7.85
February	... 567	44	7.76
March	... 557	49	8.80
April	... 745	47	6.30
May	... 1,240	77	6.26
June	... 1,152	125	10.85
Total	... 9,077	782	8.62

APPENDIX. N.

ANNUAL RETURN OF INDOOR PATIENTS TREATED IN HOSPITALS IN KEDAH
DURING THE YEAR 1344 A.H.

Diseases.	Remained.	Admitted.	Deaths.	Total Treated.	Remaining.	Remarks.
Infective Diseases.						
Cerebrospinal fever	...	5	14	...	19	...
Dysentery A.	...	19	447	97	466	47
Dysentery B.	...	35	696	155	731	40
Erysipelas	...	1	5	3	6	...
Gonorrhoea	...	15	309	1	324	14
Gonorrhoeal Rheumatism	...	7	70	...	77	4
Gonorrhoeal Conjunctivitis	...	1	12	...	13	1
Hydrophobia	2	2	2	...
Influenza	63	...	63	4
Leprosy	...	11	55	10	66	9
Madura Disease	3	...	3	2
						21 before were transferred to asylums.
Malaria.						
(a) Benign Tertian	...	97	3,201	71	3,298	212
(b) Quartan	...	6	88	3	94	4
(c) Malignant tertian	...	54	1,955	191	2,009	126
(d) Mixed infection	40	23	40	7
(e) Type not diagnosed	...	109	2,196	58	2,305	68
(f) Malarial cachexia	...	37	395	54	432	21
(g) Blackwater fever	1	...	1	...
(h) Cerebral Malaria	30	19	30	...
Measles	179	5	179	3
Mumps	46	1	46	...
Phagedoena	4	...	4	1
Pneumonia-Lobar	...	9	353	149	362	25
Pyæmia	...	2	5	3	7	...
Pyrexia of uncertain origin	1	...	1	...
Septicæmia	11	6	11	...
Small-pox
Syphilis.						
(a) Primary	...	5	71	...	76	3
(b) Secondary	...	22	416	20	438	26
(c) Inherited	1	1	1	...
Tetanus	4	2	4	...
Tuberculosis.						
Phthisis	...	17	270	150	287	17
Whooping Cough	12	...	12	...
Yaws	...	4	45	...	49	4
Other Infective Diseases	20	...	20	...
Intoxications.						
Alcoholism	11	...	11	...
Morphinism	1	1	1	...
Other Intoxications	4	2	4	1

Diseases.	Remained.	Admitted.	Died.	Total Treated.	Remaining	Remarks.
General Diseases.						
Anaemia	3	9	3	12	...	
Beri-beri	2	10	1	12	1	
Diabetes	1	...	...	1	...	
Rheumatism	1	17	...	18	...	
Lymphadenoma	...	1	1	1	...	
Other General Diseases	2	38	21	40	4	
Certain Morbid Conditions Incident to Various Parts.						
New Growth, Non-malignant	...	9	...	9	...	
New Growth, Malignant	1	6	4	7	...	
Cyst	...	8	...	8	...	
Imperforated Anus	...	1	...	1	...	
Other Morbid Conditions	...	2	...	2	...	
Diseases of the Nervous System.						
Neuritis	3	53	...	56	2	
Multiple neuritis	...	29	...	29	...	
Other Diseases of the Nerves	2	33	6	35	...	
Meningitis	...	10	5	10	...	
Myelitis	...	1	...	1	...	
Primary lateral sclerosis	...	1	...	1	...	
Locomotor ataxia	...	4	...	4	...	
Insular sclerosis	1	...	...	1	...	
Haemorrhage	1	6	6	7	...	
Abscess	...	1	1	1	...	
Other Diseases of Brain and Membranes	...	8	1	8	...	
Apoplexy	...	1	...	1	...	
Paralysis Facial	1	...	1	1	...	
Paraplegia	1	7	2	8	1	
Hemiplegia	3	17	7	20	4	
Chorea	...	2	...	2	1	
Convulsions	...	7	6	7	...	
Epilepsy	...	12	3	12	...	
Neuralgia	1	7	...	8	...	
Hysteria	...	4	...	4	...	
Neurasthenia	...	2	...	2	...	
Other Nervous Disorders	4	63	3	67	2	
Mania	2	60	...	62	6	
Melancholia	...	1	...	1	...	
Delusional insanity	...	1	...	1	...	
Dementia	...	2	...	2	...	
Other Mental Diseases	...	13	1	13	1	
Diseases of the Eye.						
Conjunctivitis	1	90	...	91	2	
Trachoma	...	2	...	2	...	
Keratitis	...	6	...	6	...	
Ulcer of cornea	2	41	...	43	3	
Staphyloma	...	2	...	2	...	
Iritis	1	2	1	3	...	
Glaucoma	...	1	...	1	...	
Hypopyon	...	...	...	...	...
Optic neuritis	...	2	...	2	1	
Optic atrophy	...	1	...	1	...	
Cataract	9	12	1	21	5	
Panophthalmitis	...	1	...	1	...	
Amblyopia and Amaurosis	1	6	...	7	7	
Errors in Refraction	...	1	...	1	...	
Other Eye Diseases	2	30	...	32	1	
Diseases of the Ear.						
Inflammation	...	4	...	4	...	
Other Ear Diseases	1	20	...	21	2	
Diseases of the Nose.						
Inflammation	...	1	...	1	...	
Other Nose Diseases	...	3	...	3	...	

57 mental cases were sent to Tanjong Rambutan vide remarks in report.

Diseases.	Remained	Admitted.	Died.	Total Treated.	Remaining	Remarks.
Diseases of the Circulatory System.						
Pericarditis	...	4	4	4	...	
Valvular Disease	...	18	10	18	...	
Myocarditis	...	2	2	2	...	
Dilatation of Heart	...	1	...	1	...	
Disordered action of the heart	...	1	2	3	...	
Aneurysm	...	1	...	1	1	
Phlebitis	...	2	...	2	...	
Thrombosis	...	1	1	1	...	
Other Diseases of the System	...	1	18	19	...	
Diseases of the Respiratory System.						
Asthma	...	2	121	2	123	5
Laryngitis	7	...	7	...
Bronchitis	...	17	403	8	420	13
Broncho-pneumonia	...	2	93	31	95	10
Gangrene of lung	2	2	2	...
Pleurisy	...	3	92	23	95	6
Empyema	...	1	7	3	8	1
Other Diseases of the system	14	3	14	...
Diseases of the Digestive System.						
Stomatitis	...	1	13	1	14	...
Ulceration of mouth	1	...	1	...
Foreign body in oesophagus	1	...	1	...
Pyorrhoea alveolaris	...	4	5	...	9	...
Caries of tooth	...	1	11	...	12	...
Sore throat	1	...	1	...
Tonsillitis	10	...	10	...
Inflammation of pharynx	7	...	7	...
Gastritis	41	1	41	2
Dyspepsia	27	...	27	2
Enteritis	...	3	104	30	107	3
Appendicitis	...	1	4	1	5	...
Colitis	...	1	9	...	10	...
Sprue	1	...	1	1
Hernia	...	3	42	1	45	...
Intestinal obstruction	5	2	5	...
Diarrhoea	...	7	80	7	87	3
Constipation	...	1	17	...	18	...
Colic	...	4	36	1	40	1
Ischio-rectal Abscess	2	...	2	...
Fissure of anus	4	...	4	...
Fistula in ano	5	...	8	...
Hemorrhoids	34	...	34	1
Hepatitis	...	1	35	1	36	...
Abscess of the liver	14	2	14	...
Cirrhosis	...	1	46	14	47	5
Congestion of liver	5	3	6	...
Jaundice	...	1	12	3	13	1
Gall stones
Peritonitis	9	9	11	...
Ascites of unknown origin	2	1	2	...
Other Diseases of the System	...	1	24	3	25	2
Diseases of the Lymphatic System.						
Spleen, Inflammation	...	2	4	...	6	...
Spleen, Rupture	1	1	1	...
Bubo	...	9	112	...	121	4
Suppuration of Glands	4	...	4	...
Lymphangitis	5	...	5	...
Other Diseases of the System	...	1	12	...	13	...
Diseases of the Urinary System.						
Acute Nephritis	...	5	61	14	66	4
Bright's disease	...	1	19	4	20	3
Cystitis	...	1	14	1	15	...
Calculus	2	...	2	...
Retention of urine	7	...	7	...
Incontinence of urine	3	...	3	...
Other Diseases of the System	...	2	6	1	8	2

Diseases.	Remained.	Admitted.	Died.	Total Treated.	Remaining	Remarks.
Diseases of the Generative System.						
Male.						
Stricture	...	16	1	16	...	
Phimosiis	2	37	1	39	...	
Ulcer Penis	...	30	1	30	1	
Soft Chancre	7	117	...	124	4	
Scrotum, Abscess	...	4	...	4	...	
Hydrocele	1	29	...	30	...	
Orchitis	...	22	...	22	1	
Epididymitis	...	2	...	2	...	
Other Diseases Male Organs	1	9	...	10	...	
Female.						
Vulva, Inflammation	...	5	...	5	...	
Other Diseases Female Organs	1	17	2	18	1	
Affections connected with Pregnancy and Parturition.						
Natural Labour	3	87	2	90	1	
Difficult Labour	...	5	...	5	1	
Abortion	...	15	...	15	...	
Rupture of perineum	...	2	...	2	1	
Retention of placenta	...	2	1	2	1	
Still-birth	...	1	...	1	...	
Premature birth	...	9	4	9	1	
Post partum haemorrhage	...	4	1	4	...	
Puerperal sapraemia	...	5	2	5	...	
Other Affections	1	6	...	7	...	
Diseases of the Female Breast	1	10	...	11	...	
Diseases of the Organs of Locomotion.						
Periostitis	...	3	...	3	...	
Caries of bones	1	6	...	7	...	
Necrosis of bones	...	9	3	9	...	
Arthritis	1	85	2	86	5	
Synovitis	...	14	...	14	...	
Ankylosis	...	1	...	1	...	
Caries of spine	...	1	...	1	1	
Curvature spine	...	1	...	1	1	
Myalgia	...	17	...	17	...	
Other Diseases of organs of locomotion	...	18	1	18	1	
Diseases of the Connective Tissue.						
Cellulitis	17	168	14	185	10	
Abscess	19	305	7	324	7	
Gangrene	1	6	2	7	1	
Oedema	...	7	...	7	...	
Other Diseases of the Connective Tissue	...	12	...	12	...	
Diseases of the Skin.						
Urticaria	...	3	...	3	...	
Eczema	1	62	...	63	1	
Boil	1	8	...	9	...	
Carbuncle	...	10	...	10	...	
Herpes	...	6	...	6	...	
Herpes zoster	...	3	...	3	...	
Psoriasis	...	4	...	4	...	
Ulcer	102	1,308	7	1,410	169	
Other Skin Diseases	5	61	1	66	8	
Injuries						
General	...	8	4	8	2	
Local—Dog bite	...	52	...	52	...	
Wounds	19	1,028	8	1,047	30	
Sprains	...	30	...	30	3	
Fractures simple	7	97	5	104	9	
Fractures compound	3	24	6	27	3	
Dislocations	...	12	...	12	...	
Other local injuries	6	330	2	336	5	
Snake bite	...	5	...	5	...	

Diseases.	Remained.	Admitted.	Died.	Total Treated.	Remsining	Remarks.
Poisons.						
Mercury	...	1	...	1	...	
Alcohol	...	2	2	2	...	
Belladonna	...	...	...	...	...
Opium	...	3	3	3	...	
Other poisons	1	10	2	11	1	
Parasites.						
Ascaris Lumbricoides	18	340	4	358	16	
Ankylostomiasis	85	1,075	109	1,160	45	
Filaria	...	9	...	9	...	
Other Nematoda	...	1	...	1	...	
Tine. Imbricata	...	10	...	10	...	
Other Vegetable Parasites	2	20	...	22	...	
Scabies	5	141	...	146	5	
Other Animal Parasites	...	5	...	5	...	
Under Observation	29	991	1	1,020	56	
No Discoverable Disease	3	274	...	277	14	
Total	924	20 412	1,503	21,336	1,163	

D. BRIDGES,
State Surgeon, Kedah.

**ANNUAL MEDICAL AND SANITARY REPORT, PERLIS,
FOR THE YEAR ENDING 30th ZULHAIJAH,
1344 A.H.
(22nd July, 1925, to 11th July, 1926 A.D.)**

I. ADMINISTRATION.

Staff.

The appointments in the Medical Department are as follows:—

The State Surgeon, who visits once a month and oftener if required.

1 Dresser Grade I.

1 Dresser Grade II.

1 Dresser Probationer.

1 Vaccinator.

First Grade Dresser J. C. Chakrabutty was on sick leave from 17.12.43 up to 29.6.44; Dresser A. W. Khan acting.

On his return from leave Dresser Chakrabutty was transferred to Kedah, and First Grade Dresser V. Krishna Pillai from Kedah, took his place.

Dresser Md. Daud was sent to Kedah, to undergo a course of training for his First Grade Examination, on 1.7.44. He was succeeded by Dresser Md. Noor from Kedah, who acted for him.

Ordinances.

No ordinance affecting public health was passed during the year.

Financial.

REVENUE.

The total revenue collected during the year was \$1,241.10, against \$999.00 during 1343 A.H.

EXPENDITURE.

The total expenditure was \$20,143.19 against \$18,412.26 during 1343 A.H.

Increase of patients, I think, accounts partly for this slight increase of expenditure. Also that an acting dresser had to be paid in addition to the man on leave.

II. PUBLIC HEALTH.

With the exception of a few cases of chicken pox, there was no case of infectious disease during the year.

The number of cases admitted to hospital for Malaria shews a decrease, from 249 in 1343 to 208 in 1344.

The scheme for a pipe water supply for Kangar, the work of which is at present in hand, will be a great help towards improving the health of the place and

it is hoped that this supply will later be extended to Arau and Sanglang.

Vital Statistics.

The population of Perlis for the year 1344 is estimated at 44,600. The following is a comparative table for the last 5 years.

Year.	Estimated Population.	Births.	Birth-rate per mille.	Deaths.	Death-rate per mille.
1340	40,900	613	14.98	606	14.81
1341	41,800	749	17.91	750	17.94
1342	42,700	851	19.92	685	16.04
1343	43,700	824	18.85	753	17.23
1344	44,600	809	18.13	767	17.19

Estimating the increase of population to be at the same rate as during the last interdecennial period, the population for 1344 should be 44,600.

Of the total 809 registered as births, 23 were still-births.

Infantile Mortality.

105 deaths were recorded as occurring in infants up to one year old, the rate being 129.79 per thousand births.

Infantile death rate for the last 5 years was:—

Year.	Deaths.	Rate per mille.
1340	77	125.61
1341	85	113.48
1342	84	98.70
1343	113	137.13
1344	105	129.79

Births and Deaths according to Nationality:—

	Births.	Deaths.
Malays	701	601
Chinese	81	117
Indians	4	29
Others	23	20
Total ...	809	767

Births and Deaths according to Sex:—

	Births.	Deaths.
Males	425	441
Females	384	326
Total ...	809	767

There were 232 deaths recorded as happening in persons over 50 years old.

III. PORT HEALTH WORK, ETC.

During the outbreak of Cholera in South Siam all boats arriving from Siamese ports were inspected.

IV. HOSPITALS AND DISPENSARIES.

General Hospital, Kangar.

The number of indoor cases treated during the year was 620. There were 43 deaths, being a percentage of 6.93 to total treated. Excluding 16 deaths, which occurred within 48 hours of admission, the death rate was 4.35.

The daily average number of inpatients was 28.51.

The figures for 1343 were:—Total cases 590, deaths 45; percentage of deaths 7.62. Percentage, excluding deaths within 48 hours of admission, 5.76. Daily average 36.07. An increase of admissions and a decrease in number of deaths, which is satisfactory.

Indoor patients according to Nationalities.

Nationality.	No. Treated.	Deaths.	Percentage of Deaths.
Chinese	270	26	9.63
Indians	239	15	6.27
Malays	100	2	2.00
Javanese	3	—	—
Siamese	7	—	—
Others	1	—	—
Total	620	43	6.93

The total of Malays treated in Hospital was

in 1341	141
1342	108
1343	89
1344	100

Or about 1/6 in the total number of patients.

Admissions from Estates and Mines.

The total number of patients from Estates and Mines was 39 with 3 deaths, or a percentage of 7.61, against 79 cases with 3 deaths (3.79 per cent.) during the previous year.

The Dresser now visits certain mines and distributes medicines to coolies. Also the Travelling Dispensary helps them. This probably accounts for the fall in admissions to Hospital of these cases.

Prevailing Diseases.

Diseases.	1342			1343			1344		
	Cases	Deaths	Deaths %	Cases	Deaths	Deaths %	Cases	Deaths	Deaths %
Malaria	146	6	4.19	249	8	3.21	208	11	5.28
Dysentery Amoeb	13	2	15.38	10	5	50.00	17	2	11.76
Dysentery Bacill	12	1	8.33	15	1	6.66	2	1	50.00
Ankylostomiasis	27	1	3.70	41	4	9.75	33	...	...
Syphilis	56	...	..	38	2	5.26	37	...	...
Pulm. Tuberculosis	12	7	58.33	7	5	71.42	12	4	33.33
Respiratory Diseases, other than Pulm. Tuberculosis	40	12	30.00	42	16	38.09	50	15	30.00
Ulcers	92	1	1.08	49	1	2.04	65	...	...
Wounds	33	1	3.03	39	...	...	54	2	3.70
Other Diseases	121	4	3.35	100	3	3.00	142	8	5.63
TOTAL	549	35	6.37	590	45	7.62	620	43	6.93

Fewer cases of Malaria were admitted to Hospital, but the death rate was higher than last year.

The death rate of dysentery appears to be higher especially in bacillary dysentery, but as the figures are small no conclusion can be drawn from them.

Laboratory Work.

Blood films were examined in 571 instances with the following results:—

Malignant Malaria.	...	...	...	20
Benign Tertian	...	...	...	156
Negative	...	...	...	395

Other specimens examined totalled 1,064.

Out-Door Department.

4249 cases were treated. The nationalities who received treatment were as follows:—

Europeans	...	...	...	77
Eurasians	...	...	...	15
Chinese	...	...	...	597
Indians	...	...	...	722
Malays	...	...	...	2,588
Japanese	...	...	...	18
Siamese	...	...	...	172
Javanese	...	...	...	60
Total	...	...	...	4,249

Up to 1343 the number of prescriptions were counted instead of the cases treated. The number of cases receiving treatment is returned from this year.

In addition to those treated in the Hospital Dispensary, 1731 cases were attended to in the Kangar Gaol.

These figures include repetitions.

Neo-Salvarsan injections to outdoor patients numbered 1363, of which 465 were for Syphilis and 898 for yaws. Injections given during the previous three years were:—

1341	2,027
1342	3,409
1343	836

Vaccination.

2,844 vaccinations were done, against 1989 during the previous year.

D. BRIDGES,
State Surgeon, Kedah.

APPENDIX.

ANNUAL RETURN OF SICK.

Return of Sick of the In-Door Patients of the General Hospital Perlis, for the Year ending Zulhajah 1344.

	Remained.	Admitted.	Total.	Dis- charged.	Trans- ferred	Absconded	Died.	Remain- ing.
General Diseases.								
Dysentery Amoebic	...	1	16	17	12	..	1	2
Dysentery Bacillary	...	1	1	2	1	...	1	...
Yaws	10	10	10	...	...	...
Malaria T.N.D.	...	1	34	35	31	...	1	3
Malaria B.T.	...	9	143	152	149	...	2	1
Malaria M T.	9	9	4	...	5	...
Malaria Cachexia	...	1	...	1	1	...	...	...
Malaria Cerebral	...	1	10	11	4	...	1	5
Pul. Tuberculosis	12	12	6	...	1	4
Syphilis Secondary	18	18	15	...	1	...
Syphilis Tertiary	...	1	18	19	19	...	...	2
Gonorrhoea	...	1	5	6	6	...	...	...
Rheumatism	2	2	2	...	...	...
Beri-Beri	...	1	...	1	1	...	...	...
Epididymitis	1	1	1	...	...	...
Typhoid	2	2	1	...	1	...
Gon. Arthritis	4	4	4	...	...	...
Gon. Ophthalmia	1	1	1	...	...	...
Cancer breast	1	1	1	...	...	...
Lipoma	4	4	4	...	...	...
Arthritis	2	2	2	...	...	...
Bubo	3	3	3	...	...	...
Erysipelas	2	2	2	...	...	...
Diseases of the Nervous System.								
Mania	...	2	4	6	3	1	...	2
Locomotor Ataxia	...	1	...	1	...	...	...	1
Neurasthenia	1	1	1	...	...	...
Eye.								
Conjunctivitis	1	1	...	...	...	1
Ear.								
Otitis	1	1	1	...	...	...
Diseases of the Circulatory System.								
V.D.H.	1	1	1	...	...	...
Diseases of Respiratory System.								
Pneumonia	...	1	25	26	11	...	15	...
Bronchitis	19	19	17	...	...	2
Pleurisy	1	1	1	...	...	...
Asthma	4	4	4	...	...	...
Diseases of Digestive System.								
Ascaris	13	13	13	...	...	...
Enteritis	6	6	6	...	...	...
Hepatitis	1	1	1	...	...	...
Jaundice	1	1	1	...	...	...
Parotitis	...	1	1	2	2	...	...	...
Ankylostomiasis	...	5	28	33	33	...	...	...
Fistula in Ano	1	1	1	...	...	...
Indigestion	6	6	6	...	...	...
Gastric Ulcer	4	4	4	...	...	...
Appendicitis	1	1	1	...	...	...
Haemorrhoids	1	1	1	...	...	...

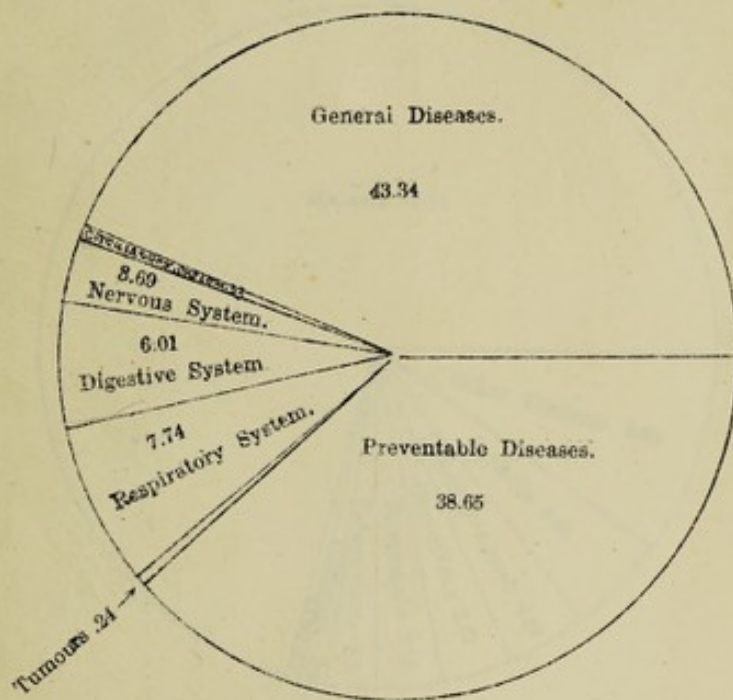
	Remained.	Admitted	Total.	Dis- charged.	Trans- ferred.	Absconded	Died.	Remain- ing.
Diseases of the Lymphatic System.								
Suppurative Lyphangitis	...	1	1	1	...	...	...	...
Affections connected with Pregnancy.								
Retained Placenta	...	1	1	1	...	...	...	...
Prolapse of Cord labour	...	1	1	...	1	...	...	...
Miscarriage	...	1	1	1	...	...	...	...
Prematurity	...	1	1	...	...	...	1	...
Premature Labour	...	1	1	...	...	...	1	...
Diseases of Connective Tissue.								
Abscess	...	17	17	13	...	3	1	...
Cellulitis	2	10	12	9	...	...	2	1
Diseases of Skin								
Ulcer	2	63	65	50	...	2	...	13
Scabies	...	4	4	4	...	...	...	...
Eczema	...	1	1	1	...	...	...	...
Injuries.								
Simple Fracture	1	...	1	1	...	...	...	...
Compound Fracture	...	1	1	...	...	...	1	...
Fracture base of Skull	...	1	1	1	...	...	...	...
Gangrene leg	...	1	1	...	...	...	1	...
Gun Shot wound	...	1	1	...	1	...	...	...
Wound	2	54	56	50	1	1	2	2
Burns	...	1	1	1	...	...	...	...
Asphyxia	...	1	1	1	...	...	...	...
Dis. hip joint	...	1	1	1	...	...	...	...
Poison.								
Opium habit	...	1	1	1	...	...	...	...
Datura Poison	...	1	1	1	...	...	...	...
Ill-defined causes	...	4	4	4	...	...	...	...
Total	34	586	620	529	4	12	43	32

CHART 6.

GENERAL SYSTEMIC AND PREVENTABLE DISEASES.

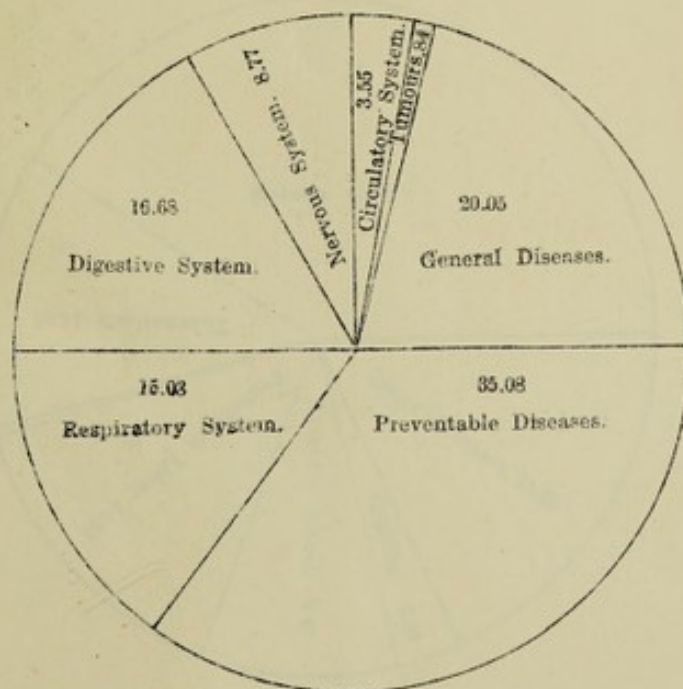
CASES. Total 9870

Chart shewing % to total.



DEATHS. Total 479

Chart shewing % to total.



CASES Total 8270

Chart showing % to total

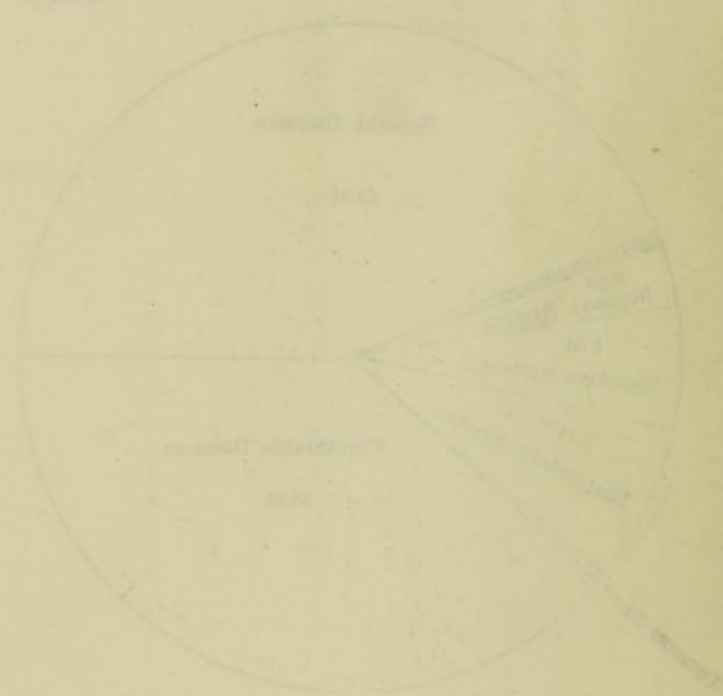


Chart showing % to total

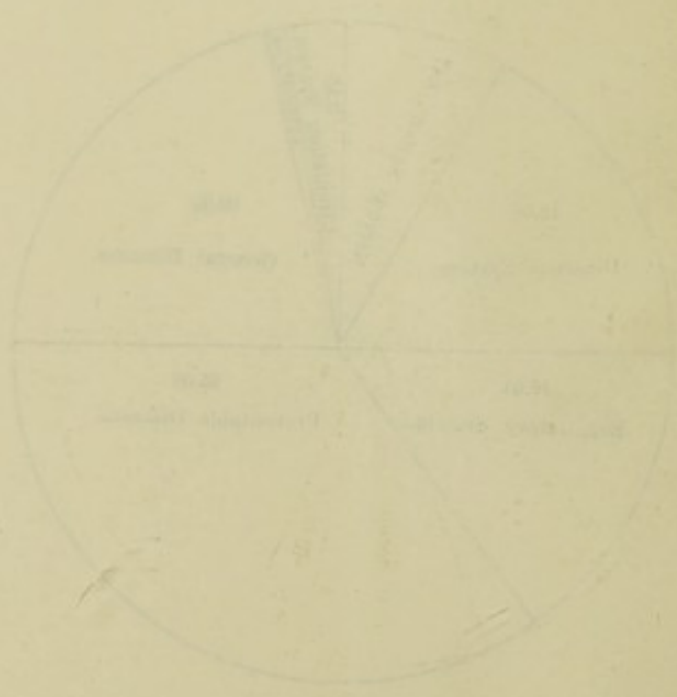
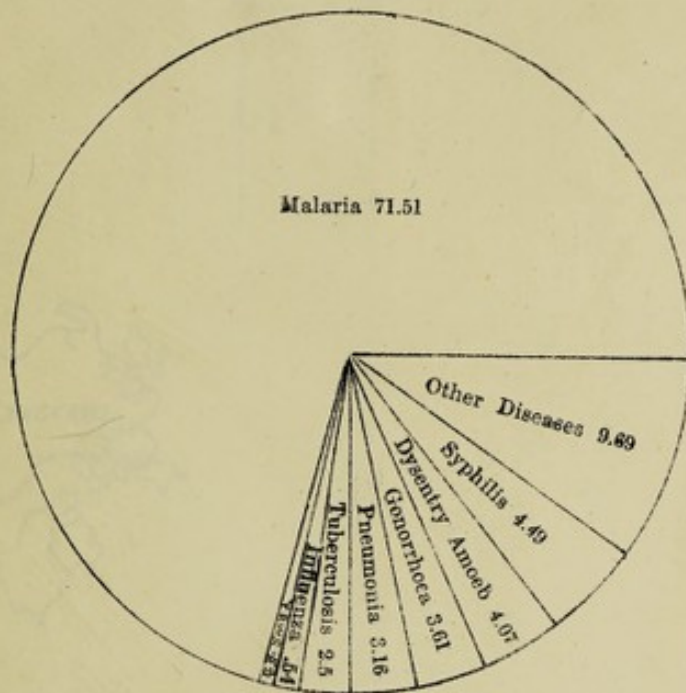


CHART 7.

INFECTIVE DISEASES.

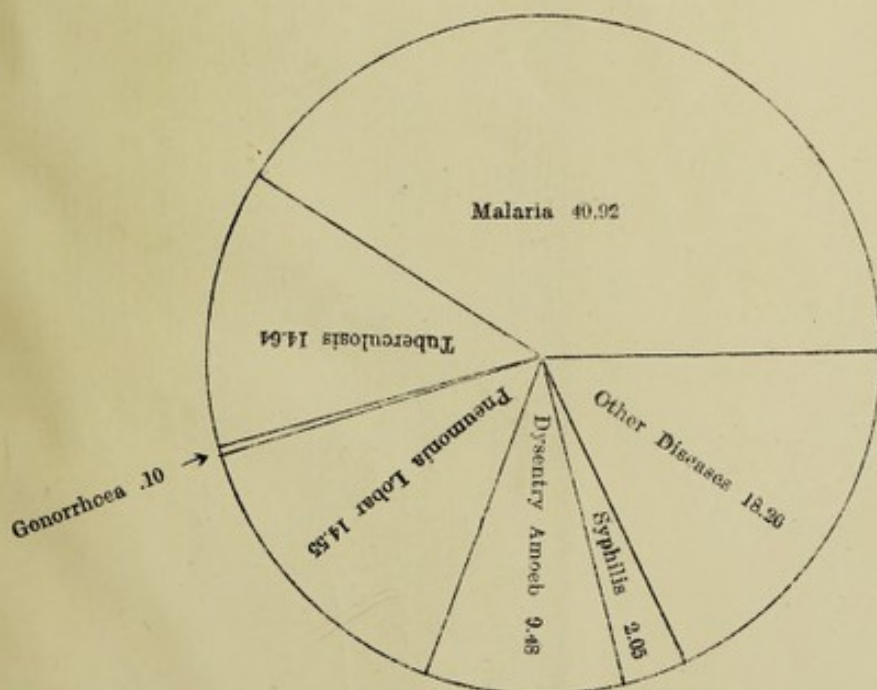
CASES. Total 11466.

Chart shewing % to total.



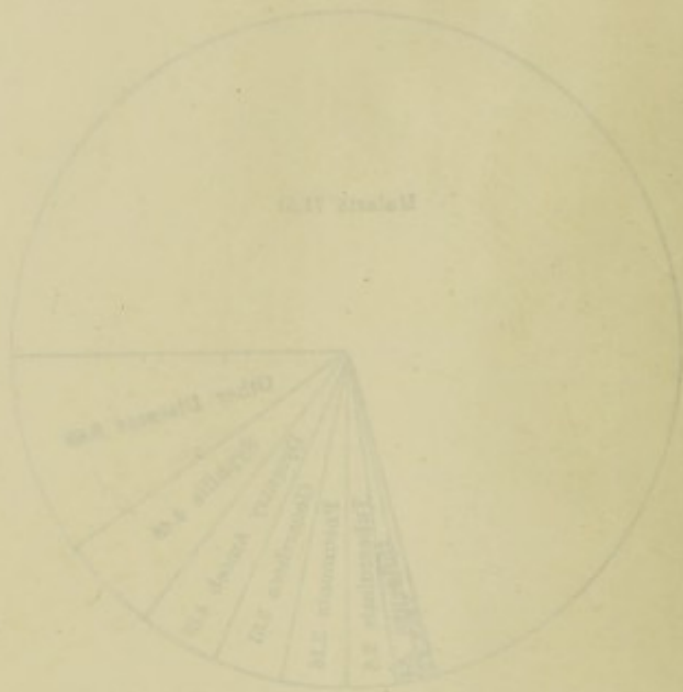
DEATHS. Total 1024.

Chart shewing % to total.



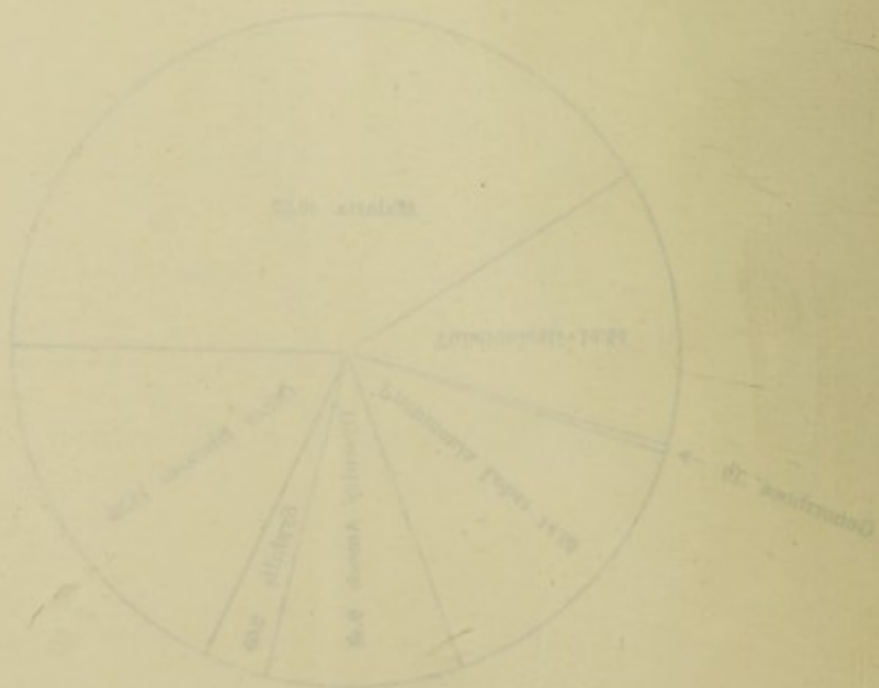
CASES Total 1188

Chart showing % to total



DEATHS Total 1084

Chart showing % to total

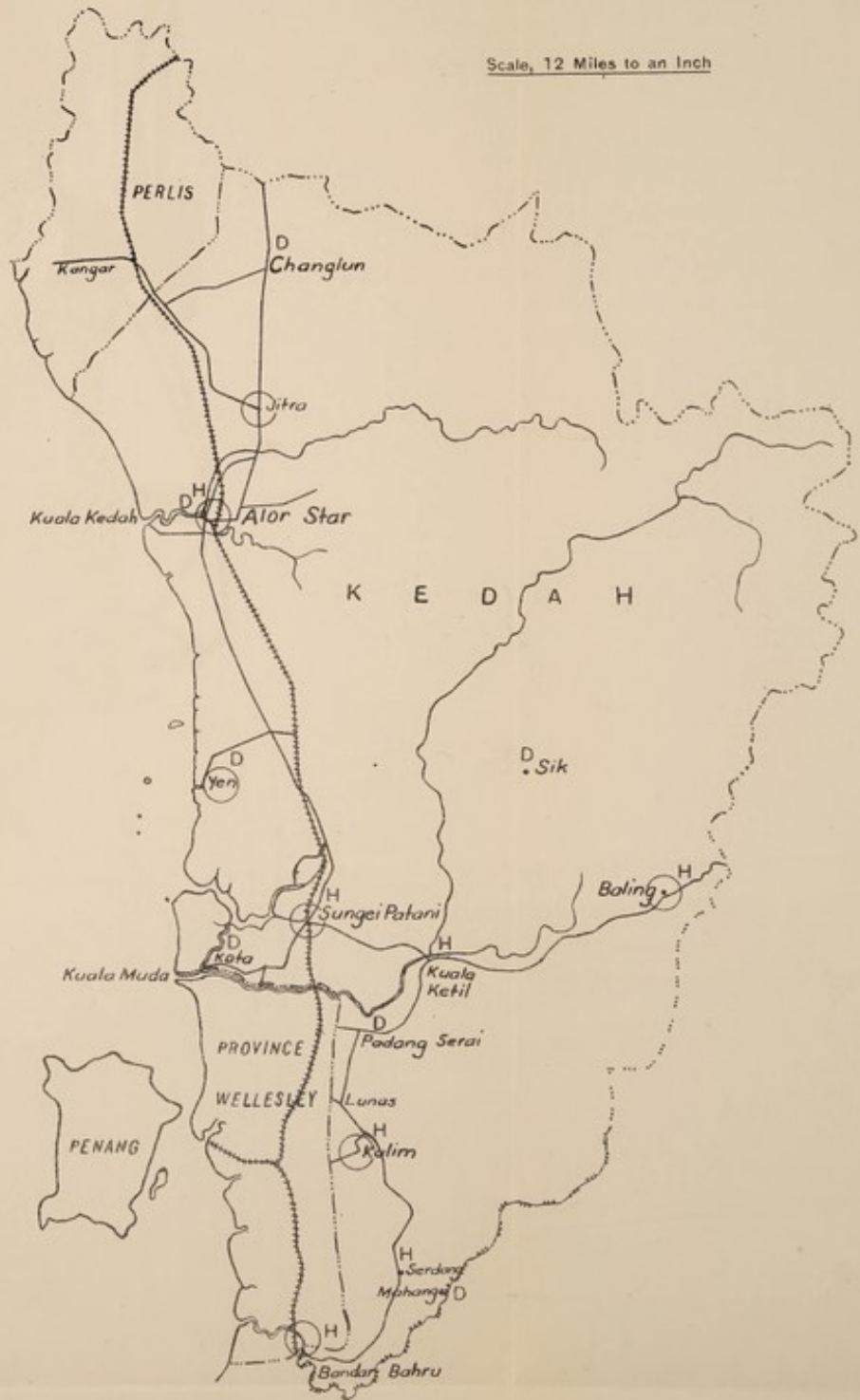







MAP OF KEDAH

(Showing Distribution of Hospitals
Dispensaries and Sanitary Board Areas)

Scale, 12 Miles to an Inch



REFERENCE

- Sanitary Board Area 
- Hospital  H
- Dispensary  D

